THE ART OF TEACHING

AS APPLIED TO

MUSIC

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HANDBOOK

ON THE

ART OF TEACHING

AS APPLIED TO

MUSIC

FOR THE USE OF STUDENTS

BY

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FORE NOTE.

HERBERT SPENCER says: "We do not for a moment believe that science will make an artist. While we contend that the leading laws both of objective and subjective phenomena must be understood by him, we by no means contend that knowledge of such laws will serve in place of natural perception. Not the poet only, but the artist of every type, is born, not made. What we assert is, that innate faculty cannot dispense with the aid of organised knowledge. Intuition will do much, but it will not do all. Only when Genius is married to Science can the highest results be produced."

If we substitute the word "teacher" for the word "artist" in the above quotation, and the word "art" for "genius" in the last sentence, the statement not only holds good for teachers generally, but for teachers of music in particular.

Though the function of the teacher is indeed an old one, yet pedagogy as a science is very new. Now gradually emerging from the old empiricism and beginning to take account of psychology and physiology in their relation to

its object, the sphere of its influence is widening day by day.

Music has ever had numerous votaries possessing the most commendable desire to instruct the uninitiated in its mysteries; and whatever defects attach to the system of musical education now in vogue, it cannot truthfully be said that this is caused by a paucity of literature dealing with the art! It may, therefore, be well to explain that the object of this little work is to direct attention to the *principles* on which successful training in music is pursued and "methods" are founded, necessarily involving some appearance of dogmatism, rather than to outline "courses." A good teacher will have as many methods as pupils; yet, although they may all differ in detail, the principles on which they are based will be identical. Musical ornamentation, technique, fingering, and the theory of music as ordinarily understood, have been already so voluminously treated by others that they are unnecessary here.

I must express my gratitude to W. Gream Stone, Esq., M.A., M.D. Oxon., F.R.C.S., for kindly revising the first section of this work, and also for some admirable suggestions.

J. W.

DENMARK HILL: *April* 1904.

NOTE TO FOURTH EDITION.

THIS issue contains some additions to the Index at the end of the volume, but is otherwise not substantially changed.

The Author again offers his best thanks for many kindly letters and suggestions made by various correspondents.

J. W.

DENMARK HILL: *May* 1908.

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ART OF TEACHING AS APPLIED TO MUSIC

CHAPTER I

GENERAL PHYSIOLOGICAL AND PSYCHOLOGICAL CONSIDERATIONS AFFECTING THE WORK OF TEACHERS.

1. BIAS, one of the seven wise men of Greece, said some twenty-four centuries ago, "Know and then do."

Right Knowing is the indispensable prelude to right Doing. Any action done without intention, knowledge or aim, can only quite occasionally and accidentally be of any use to the doer or the community.

2. Teaching implies more than mere instruction, it means training; instruction is simply a supplying with facts; training or teaching goes further than this, and shows the bearing one fact or set of

facts has on another. Teaching is therefore a compound of Knowing and Doing; it involves both science and art—the *comparison* of causes and the *manifestation* of the results of these considerations.

3. Science implies research and effort to find out the reason of things. It argues backwards from effect to cause. Sometimes it finds out that the same effects are produced by different causes. It then proceeds to inquire as to which cause or set of causes will produce the desired effect with the least expenditure of energy.

The art of teaching implies action; action implies technique; technique implies action repeated until such a degree of control has been gained as shall ensure certainty in the fulfilment of intention.

Let us further consider the differences between science and art.

Science is Knowing, art is Doing. Science adopts an attitude towards the future at once experimental and speculative, it is affirmative only in regard to the past.

Art avails itself of this knowledge and acts upon it.

Science is comparative in its method, art is positive.

Science is principally acquired, art is often instinctive and inherited.

4. We can now see why it is that the mere possession of knowledge, as we ordinarily understand the term, does not imply ability as a teacher. Nor does the possession of power of doing—or technique—imply also the possession of ability to convey this power of doing to others.

[The word "knowledge" in our language is not synonymous with wisdom. We translate the Latin "scire" and "noscere"—the German "kennen" and "wissen"—the French "connaître" and "savoir" by the same English word, which does not imply science or knowledge gained after comparison and deduction.] If to our personal experience, gained by deduction and comparison, is added actual knowledge of facts, we have one side of an ideal teacher exactly as it should be. The other side, the manifesting, the expressing of this knowledge in action, belongs to the domain of art, and requires for its exemplification the possession of technique. It is hard to say which is the more pitiable (or ludicrous) sight—the endeavour of an ignorant or vain person to manifest thoughts he cannot adequately express, or that of one who endeavours to conceal his want of real knowledge, or real emotion, by an absurdly pretentious or exaggerated mode of expression, which feigns that which is not felt. These two states or conditions are entirely distinct from, and must not

be confounded with, the not uncommon position or case in which the subject, though genuinely possessed of learning, knowledge of facts or the power of doing, is unable to communicate the learning or information as to his method of "Doing," to others.

This inability arises—when there is little power of adequately expressing actual *knowledge* possessed or personally acquired—from want of training in the technique of expressing; and the second instance, where *technique* is possessed without the subject being able to communicate it, is often explained by the fact that the necessary experience has been *inherited.* Without some psychological knowledge and power of introspection, such persons can never be good teachers in the ordinary sense of the word. Their influence as models or exponents of results is, however, frequently great and valuable.

5. The possession of technique invariably implies experience; in other words, repetition of efforts. There seems no doubt that this experience can be to a considerable extent inherited, and that it is not always consciously acquired by the individual. This inherited experience, generally spoken of as instinct or intuition, may become so diffused, to name an instance, as to lead to the "universal unthinking method of individual bees

whose cell-making instinct has practically anticipated the discoveries of profound mathematicians."

Where instinct is present, it seems to some extent to take the place of reason; and even amongst human beings, those whose actions are prompted largely by it are not as a rule introspective by habit, and therefore are often unable to analyse the thought-process by which the results are brought about. This is the probable explanation of the considerable powers of technique sometimes evidenced by young children, who seem to do by intuition that which requires in others some years of study. The problem of heredity is too vast to be entered into here; but those who choose to pursue the subject will find much information and food for thought in the following works :—

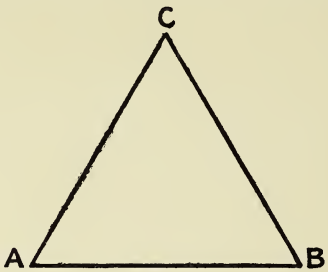
Theo. Ribot : *Heredity.*
J. M. Guyau : *Education and Heredity.*
Lloyd Morgan : *Habit and Instinct.*

6. When knowledge or technique has been acquired by the individual, as apart from those forms of experience which may have been inherited, with adequate training in the art of expressing and method, good and able teachers may and will result.

It is through the personal experience gained that "self-taught" people (as the popular phrase

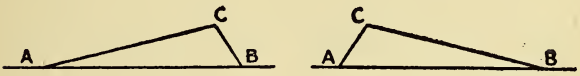
has it) or those partially "self-taught" are often very good teachers, if their acquirements are adequate.

In sooth, the highest object of the true teacher is to train the student to teach himself; and in this sense all real training by the teacher is that which induces self-training in the student.



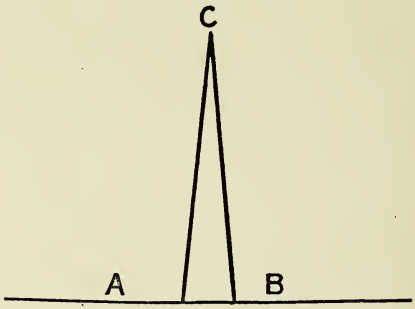
This diagram may assist to a clear comprehension. Let the educational end or result desired be C. Let A C be the line of science or knowing (including psychology, physiology, and philosophy and method). Let B C be the line of art and doing (including sympathy, tact, experience, use, and technique and proficiency). Let A B be the base necessary for the support of the superstructure, representing an adequate endowment of mental and physical vigour. This pyramid, the type of permanence, solidity, and strength, may be regarded not only as an indication of the directions in which the student's steps are to be guided, but

also of the teacher's methods themselves, for unless the technique of the teacher in imparting is adequate and duly proportionate to his knowledge, the apex of the triangle can never be reached. It is as impossible to educate successfully on any other lines than those indicated above (*vide* diagram) as to enclose a space by fewer than three straight lines. And further, teachers should observe that this triangle is equilateral; if the base be small, or, in other words, the natural equipment meagre, the apex cannot safely be raised very high. It is, however, preferable that the pyramid be not high rather than that its sides be ill-proportioned, as would be the case if the direction the figure assumed were either of the following forms of scalene triangle, the first of which represents the teacher full of knowledge, but with no technique, and the second represents the teacher who, though possessed of certain practical acquirements, is unable to communicate his ability to others :—



Regarding C as the result of effort, it is here but slightly elevated from the base in either case; and so long as educational method or machinery is

constructed on any lines which do not build up the equilateral triangle on an ample base, so long will the results be poor and unsatisfactory. The remaining apparent alternative, that of raising a high structure on a small base, implies such a degree of instability that it is practically unavailable.



7. Sensations, perceptions, consciousness in any form of life demand the presence of nervous structure, which may be broadly classified under two heads: Nerve-fibres and Nerve-cells.

These cells when grouped together in various parts of the body are called "ganglia," and they are connected by bundles of the nerve-fibres just mentioned. The especial characteristic of living nervous structure is its response to stimulus.

Some nerves carry impressions inwards (such as those conveyed through the eye or skin); others carry impulses outwards, as from the brain

to the muscles of the limbs. These two kinds of nerves are called respectively sensory and motor nerves. Those conveying sensation and those carrying impulse that cause motion (so far as their apparent structure goes) are undistinguishable; but it is worthy of notice that, broadly speaking, while the sensory nerves have no power of causing motion, the motor nerves have no capability of conveying sensation. They are also known as centripetal and centrifugal nerves, because they respectively convey impressions inwards and outwards; they have also been termed afferent and efferent nerves. The nerve centres (or group of cells which receive or originate the impulses carried by the nerves) are arranged in an ascending scale of complexity. Those known as lower centres are situate mostly in the spinal cord, and the higher centres are within the cranium or skull, of which the highest are found in the cortex, the most superficial portion of the brain.

8. The higher and lower centres respectively may be said to control the voluntary and involuntary motions which result from the stimulating of a nerve. For all complicated and varied simultaneous motions, such as pianoforte playing, both higher and lower centres co-operate; but simple and involuntary acts are often effected by the lower centres without reference to the higher ones; as in

the case of the convulsive motions produced by tickling.

These involuntary motions are called "reflexes" or "rebounds." It may, however, be noted that even in the case of complicated actions, if they be often repeated, there is a tendency for them to be referred to the lower centres, and to become almost automatic in their response to the accustomed stimulus: in short, "reflexes."

9. The mental capacities, like the bodily, develop in an orderly and on the whole regular system. The differences in attainments between various individuals lie more in the *varying degrees of rapidity* through which the various stages of development pass, and in the variation in potential development in different directions possessed by the individual, than in the sequence of evolution in the mind itself. All intelligences, however, appear to have a "saturation point," or limit beyond which at any given moment it seems impossible to go. This would seem to be determined by the (*a*) conformation of the brain, (*b*) the number of its convolutions, (*c*) the number of cells it contains, and also very largely (*d*) by the development of the bundles of nerve-fibres which connect the various cells in the grey matter of the spinal cord and brain.

Conditions *a b* and *c* are, broadly speaking,

incapable of change, modification or alteration ; and it is only the condition *d* which is in any sense under the control of the individual or susceptible of change under ordinary circumstances.

10. It is therefore in the development of those canals or conduits which convey the nervous impulses from various centres to others that superior intelligence, rapidity of motion, and the rapid transference of thought into action depends.

What, then, is Education physiologically? and to what end should a teacher's efforts be directed?

THE INCREASE IN RAMIFICATION OF THESE CONNECTING FIBRES.

Amongst the commonest *stimuli* experienced by nervous structures are sound, light, and heat: these we know to be produced each in a similar manner.

Sound is produced by the air or some other elastic body being made to assume a *vibratory* motion.

Heat is also a mode of motion, which according to the *undulatory* theory (the one usually accepted in modern times), is produced by the *vibration* of the particles of a certain body (the hottest being those in which the velocity and *amplitude* of the vibration is greatest).

Light is produced also by the action of a

luminous body upon ether, by which extremely rapid *vibration* is brought about.

Life, consciousness, and all forms of action *are also modes of vibration*, and activities are to be measured by the completeness, regularity and efficiency with which those vibrations are effected. For the brain to do all the work of which it is capable, an adequate supply of healthy arterial blood is necessary, together with an efficient circulatory system within itself. All forms of life, even of the same kind, differ not only from each other, but also among themselves in this matter.

As a result of the special nature of the sap-channels in the ash, the sap ascends more slowly in this tree than in the sycamore, which latter therefore assumes its leaves earlier and sheds them later than is possible to the ash with its less developed circulatory system. But one ash tree will not necessarily bud or shed its leaves simultaneously with every other ash tree, or one sycamore with another, because local circumstances or heredity and environment largely influence all growths and activities ; in some instances to such an extent that our notions, if gained by experience of individual instances, are likely to be largely erroneous.

"There is no greater anomaly"—as Professor Owen has remarked—"in Nature than a bird that cannot fly" ; yet there are several in this state. Darwin points out that of the 550 species of beetles inhabiting the Island of Madeira 200 cannot fly. The

reasons for these facts are quite local, added to the influence of heredity, yet persons arguing from limited experience would be justified (in their own opinions) in assuming that because one kind of bird or beetle could or could not fly that all other birds or beetles were in like condition, and they would probably stoutly maintain such a position until a more perfect and wider knowledge was attained. Then it would be admitted that some birds fly and some do not, or that some beetles fly and some do not ; but even with this increased knowledge there might be incredulity as to the existence of *animals* which fly. Yet we know that there are such, and that in the past there have been also flying reptiles.

There is always a great danger in endeavouring to lay down a general proposition, if care be not taken to avoid deducing it from too few particular instances.

That great feature in Nature's method of working, uniformity in principle with variation in detail, permeates all structures and all forms of life.

Just as we can differentiate between the leaf of an ash or a sycamore, so in turn do we find that every individual leaf on the same tree differs in some respects from that of its fellow.

Unity of design is not incompatible with variety of detail, and indeed true unity often implies a great deal of variety : the advancing or receding tide of the ocean waves is a remarkable instance of absolute unity of purpose with ever-varying change of form. It may indeed be assumed (as has been pointed out by Darwin) that diversity of structure in forces having a common end is an

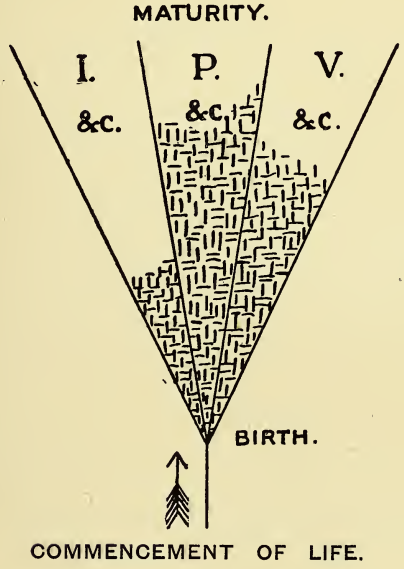
advantage, bringing about division of labour and so supporting a greater amount of life.

Variety is not diversity, and unity is not uniformity. This is a great principle in Nature, and one which is equally true of the lower forms of activity as of the higher.

11. Not only does one individual differ from another of the same kind in detail, while conforming in general resemblance, and obeying in like manner the laws of Nature, but the individual differs within itself at various stages of its life. Up to about the seventh year, the brain of a child is in a very plastic state, and although almost weighing as much then as in maturity, yet the convolutions are not complete, and the nerve-cells and nerve-fibres are undeveloped. As a result, the child is impressionable and easily influenced, and the logical and deductive methods of thought are almost an impossibility. (It will be perceived that the words "growth" and "development" are not synonymous. Growth means increase in size: development implies increase in complexity of structure.) The development of the brain may roughly be said to consist in the multiplication and subdivision of the nerve-fibres and the expansion of the nerve-cells, with, ultimately, the full connection and association of various groups of nerve-centres permitting of harmonious and concerted action.

M. Isidore St. Hilaire was the first to call attention to the important physiological law that there is an antagonism between growth and development. If development is carried on with too great activity before growth is complete, the ultimate effect (according to Herbert Spencer) is a falling short of the results that would otherwise have been attained. It is, he says, "probably the chief cause why precocious children and youths who up to a certain time were carrying all before them, so often stop short."

The following diagram * may serve to illustrate the principle of development from the earliest beginning of life to maturity:



* I am indebted for the idea of this diagram to the sketch in Dr. Sully's *Teachers' Handbook of Psychology*, p. 62, but I have modified it in detail.

It should be noted that the lines of progress are both vertical and horizontal. As the mental faculties proceed in an upward direction, from birth to maturity, not only are more and more possibilities for subdivisions made in the Intellectual, Perceptive, and Volitional capacities as time advances, but a stronger and more highly developed process is taking place in a horizontal direction, illustrating that interchanging, interlocking, and mutually affecting action which is continually taking place.

The three forms in which it has been suggested that mental activity is manifested are here mentioned :—

(1) *Physical and mental perception* : a direct sense impression, such as something seen or heard ; or an emotion, love, hatred, ambition, &c., felt or experienced.

(2) *Intellectuality* : power of deduction, reasoning and knowledge ; receptiveness.

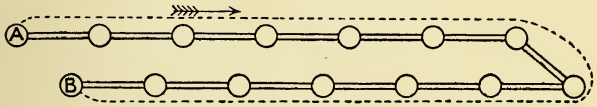
(3) *The power of willing or volition* : manifesting in action, or abstaining from action.

12. Just as the fertility of a country is largely dependent on its system of irrigation, or the general health of an individual on the perfection of the circulatory and excretory systems, so the mental power is largely dependent not only on the degree of perfection with which the brain is supplied with healthy arterial blood and the waste removed, but also upon the complexity of reticulation of the fibres or conduits which connect the various brain cells and their layers. Recent researches by microscopists tend to show that this degree of

completeness of the mesh-work of fibres conveying the nervous impulse from one cell to another, and from one centre to another, may be considerably increased by the voluntary efforts of the individual. We are all familiar with the comparative difficulty with which we recall isolated facts and names, or perform unaccustomed movements; and we all know how easy it all becomes, after many or a few repetitions, according to circumstances.

It seems certain that under the pressure of repeated efforts of the will, new fibres or conduits for the transmission of the nervous force may be formed, and a practically instantaneous correlation or association be established.

A diagram may help to make this clear:

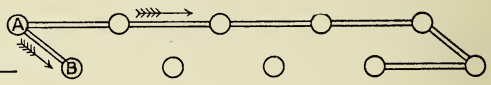


13. Let us assume that it is desired to connect the Battle of Flodden Field with its date, or that a musical performer desires to associate a certain sound with a particular key on his instrument, and that these separate conceptions are each associated with the brain cells lettered A and B. The nervous impulse travels in the direction indicated by the dotted line until impeded by structure, when it takes a backward course and ultimately

reaches B, though not perhaps without difficulty and delay. But if persistent efforts are made at not too great intervals of time, Nature, ever conserving and economising her energies, completes the process in a summary manner.

A *new* canal or conduit is made directly or as directly as possible, connecting the two cell series somewhat after this manner—

Instead of the impulse travelling thus—



we have this—

resulting in a practically instantaneous correlation or association, in which no time or energy is wasted.

(It must not be assumed that the nervous impulse proceeds necessarily in straight lines, or that the above diagram attempts to be a pictorial representation of what actually takes place; it is merely designed to illustrate the principle in an approximate manner.)

But it is important to observe that the repeated efforts must be not only sufficiently numerous in themselves, but must be made at not too great a distance of time; the impression should be renewed before it has entirely faded away. Ten repetitions at least are often necessary to effect the desired result when the concepts are entirely new and apparently uncorrelated.

14. Just as the mouth and nose, as representing the stomach and lungs, are the principal channels for the nourishment and conservation of the body, so the eye and the ear form the principal avenues to the mind. (The other senses—taste, smell, and touch—are not commonly developed to anything like the same discriminatory extent as sight and hearing, and are therefore not so directly engaged in the higher intellectual processes; though it may be noted that in cases of defective sight, touch develops an extraordinary degree of sensitiveness which serves in some measure to compensate for the loss of sight; in fact, all the senses appear to have some capacity for expansion when the number engaged is fewer than normal, provided sight or hearing is one of those remaining.)

Sight and hearing are equally necessary to the fullest development possible to the individual, though they often have some mutual compensatory power if one be lost or injured. In those rare cases, however, where infants are born both blind and deaf, all communication with the mind is almost impossible, and the child remains practically an idiot (*i.e.* person of undeveloped senses) while life lasts. A well authenticated instance of this is that of a German boy, Kasper Hauser, who was isolated and kept in the dark: at the age of sixteen he had a mind no further developed than a baby.

(See article on Hauser in Chambers's Encyclopædia, and there are additional particulars in the *Quarterly Review*, 1888.)

The degree of sensitiveness to percepts—*i.e.* impressions received through the eye and ear and other senses—varies much in different individuals; and rarely is the degree of discriminatory power equally developed in different senses in the same individual. Still more rarely is it the case, broadly speaking, that individuals remarkably quick as to percepts have the intellectual capacity or the volitional capacity in equal degree. Those engaged in active outdoor pursuits develop their perceptive sense primarily; those chiefly occupied in those forms of existence which do not require extreme development of the perceptive senses develop more easily the intellectual. A sportsman of any kind probably would see and hear more that goes on in a country walk than the University professor of mathematics by his side; on the other hand, it would be difficult to interest a gamekeeper or a farmer in any intellectual problem, such as chess-playing, that does not immediately concern his own interest or occupation (Sec. 44).

15. We have already seen that a combination of science and art is necessary to form an ideal teacher. Analogously, a blend in due proportion of perceptiveness and intellectuality forms the

perfect mind; and further still analogously the equally well-developed body and mind form the perfect man.

16. It is the function of the teacher to harmoniously blend, balance and develop the perceptive, intellectual, and volitional elements in due proportions, and so far as it may be possible equally, by influencing the mind through the senses.

17. In order that an impression be left on the mind for any length of time, it must be either very deep or it must be many times revived at short intervals.

The recalling of this impression is known as memory.

18. The recalling of a past impression of sufficient depth is often quite involuntary: it is brought about whenever an association, as it has been termed, has set up the train of ideas which surrounded or led up to the original experience. For instance, riding outside an omnibus through a familiar thoroughfare we see a crowd; on reaching the spot we discover that someone we know has been run over and perhaps killed. We are naturally shocked or pained, and for some time afterwards the occurrence is continually cropping up in our mind without our desiring it, or knowing quite how it comes about. It is, however, brought

about by some one of the *circumstances* associated with the impression. Every time we see an omnibus the incident is recalled; it is recalled with increased vividness every time we ride in one; and if, after seeing an omnibus, we proceed through the same thoroughfare in which the accident happened, the revival becomes more powerful still. Should there happen to be a crowd gathered near the fatal spot, the impression is absolutely painful in its intensity and seems to be almost an actual repetition of the former experience.

This is an instance of what might be termed "involuntary memory" set up by a train of associated thoughts. There are numerous ways in which this species of recalling is in continual use which will readily occur to all—such as a scent or sound recalling a particular event or place, &c. It is worth while noticing in the case of past experiences recalled in this way that in time the weaker associations—*i.e.* those most distant from the impression—tend to die away in the order in which they occurred, until even the image itself after lapse of time and many appearances has almost disappeared.

If even then a *new* association suddenly springs up, the original image may flash out again almost as brightly as ever. This apparent fortuitousness

as to coming and going of impressions, even in health, is a special characteristic of involuntary memory, which plays its possessors many curious tricks, sometimes giving a person's conversation a false appearance of brilliancy or a comparative aspect of dulness, as the case may be, under the influence of temporary excitement or the reverse—akin to the effect of some drugs which stimulate and depress in succession. (A few authors in speaking of memory discriminate between its retention and reproduction. These sufficiently correspond with the conditions already spoken of as involuntary and voluntary memory for ordinary purposes.)

19. Very different is that form of revival of impression which we may call voluntary memory. In this there is a well-regulated and correlated train of thought, which when, as it were, set in motion, flows on in a constant stream through ordered courses. When applied to abstract matters, it becomes *scholarship* or learning. It is essentially formed not only by *interest* in the matter in hand, but also largely by repetition of effort when the impression is found to have become effaced.

Scholarship is essentially *acquired* by the individual. Environment, predisposition, or heredity are all favourable conditions for its ultimate development, but they have no influence on its

immediate possession. It is generally the result of long-continued and more or less frequent repetition of effort, on the reticular structure of the brain and the development of the interlacing fibres. The more perfect this development becomes the wider the scholarship and the more thorough the knowledge. It is worth while observing that, unlike involuntary memory, here the recurrence of the experience makes the impression stronger, for all intellectual processes gain vastly by repetition; while percepts (sense impressions) decline in vividness under the same conditions (Sec. 18).

20. Adjacent areas of the brain naturally become readily reticulated under the stimulus of repeated efforts. When one particular area becomes especially reticulated there results "specialism" in some capacity or another. But specialism in one department does not necessarily mean great or high development in others. On the other hand, a high general degree of reticulation as a whole is favourable to the special development of a part. For this reason, the acquiring of a good general education is an almost necessary preliminary to the work of specialisation, whether this be technical or scientific.

21. It is the necessity for cultivating or preparing the soil to some extent, as it were, as a whole before commencing to set portions apart for special

purposes, that in a comparatively humble way leads to the necessity of candidates for the detective force being recruited from those who have passed through the general work of the police force; or, in a higher plane, that demands that the physician or surgeon specialist shall have firstly qualified in such a way as to entitle to general practice.

22. It follows, therefore, from these propositions that we occasionally find a specialist who is largely inefficient outside his own province; or an all-round man who is inferior to the specialist in some particular capacity. The one condition implies the development of one portion of the brain with comparative neglect of the other; the alternative condition being that while the brain as a whole has been exercised and used, yet no exceptional efforts have been made in any one direction.

23. These considerations sufficiently account for the recurrent phases of thought, which seem to cry out sometimes for "specialism" and sometimes for "all-roundness" each in turn, according to the particular nature of the circumstances at the time.

24. The ideal condition is to become a specialist in one direction and a universalist as a whole, and to preserve this attitude; for though a narrow specialism long kept up does not improve the intellect generally, yet a keen universalism does undoubtedly tend to the development of the

specialising faculty, by its tendency to systematise and correlate modes of thought.

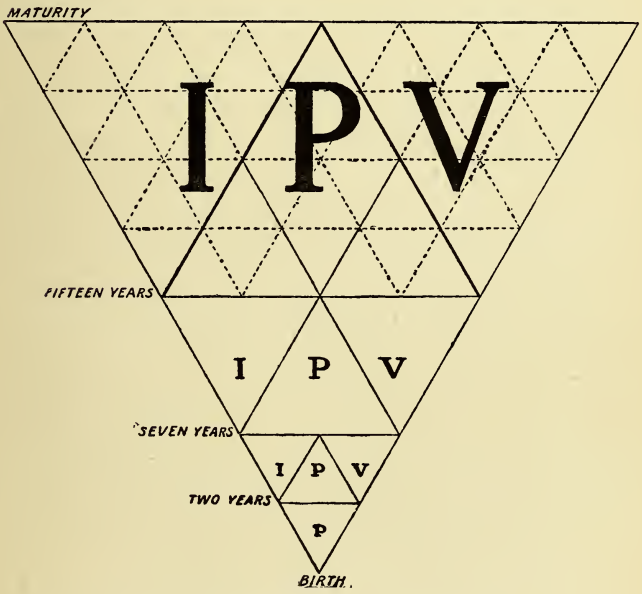
25. If it be a point of great importance that successful specialism must not be thought of or be attempted before a considerable degree of broad intellectual development be attained, so it is equally certain that this broad intellectual platform will never be reached if an undeveloped intellect tries to widen its sphere of thought before it is sufficiently matured.

26. This, if one of the commonest, is also one of the gravest errors any teacher, educationalist or system of education can possibly commit.

It is one of the chief and probably best grounded of the charges brought against the usual systems of State education—in which children and teachers are encouraged or compelled to attempt the acquisition of much varied knowledge before the mental powers have been sufficiently matured. It is not every stone that will bear or is worth polishing, though each may very well be cleaned; and similarly an ideal teacher or educational system will, while providing and ensuring that each individual comes under the influence of the wheel—to test its mettle—only pursue the further or later processes on worthy material.

The following diagram may serve to suggest not only the general principle on which mental

development expands, but also the principle on which successful specialisation is based ; and it will also serve to indicate, when any form of specialisation is embarked on, the lines it in turn follows. (The numbers on the left hand refer to the approximate ages at which the mental processes may be differentiated, while the letters I., P., and V. refer to Sec. 11, standing for Intellect, Perception, and Volition.)



27. We have divided memory into two kinds: that which occurs *voluntarily*—through the exercise

of the will—and that which occurs *involuntarily* or without conscious effort. In either case the impression is revived through the possession of some element common alike to the present or the past, which connects the train of thought (Sec. 18). This mental phenomenon called association—set up by that which has been termed suggestion—is generally supposed to be accomplished in three ways :—

(1) By similarity : the more two objects are alike the more does one suggest the other.

(2) By dissimilarity : or contrast, involving the element of surprise ; and some experience and comparative power.

(3) By nearness as to position in time or space (or as expressed by some—the relation of cause and effect).

These conditions are often used in combination when the revivification is made quickly and fully. It may be noticed that immature minds much more readily revive sense impressions (or percepts) rather than ideas suggested by other ideas (which are concepts), though in actual life we are continually passing from one state to another.

28. It has been said that the power to recall past percepts or concepts depends upon the depth of the impression: it is well to notice that the

necessary depth can be effected in two different ways.

It may be either brought about by—

(1) The interest or novelty and exceptional nature of the experience in itself (Sec. 18, 19).

(2) A deep impression may be made by the continual repetition of a slight one. This has often to be done in special cases. To some extent interest is a substitute for repetition : and in regard to the more purely intellectual processes the able teacher will always endeavour to correlate new facts with those already possessed in the way calculated to bring about the desired end most rapidly and permanently, which is by the creation of *interest* (Sec. 42).

29. When knowledge has to be transformed into action, if it should be at all of a complex kind, many repetitions must be made before complete control is established. Even in the comparatively simple forms of technique involved in such occupations as filling match-boxes or biscuit-boxes, it is some time before automatism is reached ; and in such pursuits as billiard-playing, performing on the violin or pianoforte, the difficulties are immensely greater, the movements being more and more of a complex character. But proficiency is always much more rapidly acquired if physical effort is accompanied by intelligent aim, and it

is preserved longer: indeed, repetition undirected by intelligence to the point of automatism is positively dangerous, and not seldom results in such affections as hammer-man's cramp, pianist's cramp, writer's cramp, where, a high power of control having been gained, its merely mechanical use subsequently has resulted finally in its rapid decline and eventual loss.

30. Given, however, a perfect knowledge of ways and means on the part of a teacher, combined with every advantage of personal manner, there are still two factors which no teacher desiring success can possibly ignore.

These are:—

(1) Environment and heredity.

(2) The temperament and individuality of the student.

31. These two elements are intimately and mutually related. Temperament and individuality are partly inherited and very largely formed by the influences and surroundings during the impressionable period of life; and certain kinds of characteristics then gained are almost uneradicable, no matter what the subsequent influences and surroundings may be, or how they may differ from the original ones. It will be convenient to consider Environment and Temperament separately.

32. The more complex the organisation, the longer is the duration of infancy: consequently, the more impressionable individuals are, as a natural result of this complexity, specially amenable to the influence of environment, whether for good or bad.

Social environment, wide-reaching in its effects —operating unconsciously and unintentionally— is yet absolutely necessary to any mental development (Sec. 35). The longer a growing mind is subject to one particular kind of environment, whether it be physical or social, the more permanent will be its effect; and with every increase in mental capacity (Sec. 26) is *pro rata* increased the influence of the environment of the time.

33. By the exercise of tact and discretion a teacher is often able to modify many unfavourable conditions. The habit of obedience, a realisation of a sense of duty, a feeling of ambition and emulation, and a desire to contribute to the pleasures of others, are all features the development of which form a necessary part of a teacher's functions and duties.

34. A child's latent potentialities are principally determined by environment. Under good influences these progress, broadly speaking, nearly uniformly. But if the surroundings are bad, one particular characteristic is often developed in a degree out of all proportion to the rest. As a result we have

at one extreme the boy criminal—at the other, the man with one idea.

Before maturity is reached, we may find much inequality in the rapidity with which the respective functions of the brain progress ; but this in itself does not imply a low grade of intelligence, taking things as a whole.

Sometimes a faculty apparently dormant will suddenly burst into extraordinary activity. Darwin and his cousin Mr. Galton were by no means bright school-boys, and Richter mentions a great mathematician, who from incapacity for ordinary studies or business was a day labourer for thirty-eight years.

A healthy sanity at maturity depends upon the approximately equal adjustment of the perceptive and intellectual faculties, which control and guide the volitional element.

35. The effect of environment or use, powerful as it is on the growth of the body, is even greater on the mind.

According to Darwin ("Descent of Man," Part I. Chap. II.), the legs of sailors employed in the American Civil War were on the average slightly longer, and their arms shorter than those of soldiers, and who can mistake the groom or jockey or a military officer? But these class peculiarities are not greater ; they are less than the general resemblance

of mind-type amongst persons engaged in a similar class of mental occupation, such as lawyers, medical men, or ministers of religion. None but the dullest of minds can ever escape such influences: but it must not be assumed that the most plastic brain is necessarily the most desirable. This kind of mentality is sometimes marked by great weakness of the volitional element: it is occasionally too sensitive to be a good fighter; it often matures too early and declines very rapidly.

By *individuality* is meant those special mental features which so colour a personality that it is easily distinguished from others. It implies some departure from the normal, not carried to a degree of eccentricity. Individuality is a growth or development for which environment is principally responsible. It is involuntarily acquired and in this respect differs from eccentricity, which when it is not the product of mental obliquity is often *assumed.* Individuality is closely allied to style. That almost undefinable quality known as style is commonly the result of *unconscious* imitation on the part of the individual of those qualities or objects most admired.

A mechanical or intentional imitation is, on the other hand, detrimental to the cultivation of style or individuality.

There is scarcely anything more capable of being invested with individuality than hand-writing, providing that the writer has access to varied models and is allowed independence of action. If, however, for any cause close imitation is persisted in, we have a hand-writing quite devoid of individuality —such as is that of the solicitor's clerk, the Inland Revenue clerk, &c. Similarly we may have an "unformed" hand, such as that of a domestic servant who has had few models and but slight experience.

36. A teacher, therefore, who wishes to encourage individuality in a student will take care that a narrow spirit of imitativeness is avoided, and that there is a power of choice. His functions are to provide this, and to guard against exaggerated use of that spirit of freedom which in a general way is to be encouraged and permitted.

37. Exertion or effort is the response made by the centrifugal system to the centripetal (Sec. 7).

When the effort is mental, rather than physical, the impelling power is still the same. This may be broadly stated to be personal advantage or personal satisfaction. In imperfectly or crudely developed nervous systems, this craving is of the rudest and most selfish of forms, having for its object the simple sustaining of life. As the organisation grows more complex, and the higher stages are gradually

evolved, we have developed ultimately—reasoning power, which when united to benevolence and sympathy, causes us to endeavour so to influence our fellow-creatures in need as to secure for them the benefits which a particular course of action has been observed to produce in others.

38. The desire to help others (a particularly essential one for teachers) is a special feature of comparatively high mental development. Its real value is determined by the actual self-sacrifice involved in helping. Sometimes there is merely an aversion, a cognisance of a disagreeable experience on the part of others—constituting repulsion or disgust. When this is united to a desire to help—though it may be through force of circumstances *passive*, we have pity or compassion. If circumstances are such that our desire to help is successfully manifest in action, we derive mental satisfaction, and the previous uncomfortable sensations are removed in accordance with nature's own methods.

39. Personal advantage or satisfaction takes many forms, according to the complexity of the individual temperament. It is not necessary to analyse these in their relation to physical exertion, though they may be regarded as corresponding to those involved in voluntary mental exertion, which may now be considered.

40. Teachers can point out that special mental exertion may result in personal advantage in the following ways :

(1) *Increased Income.*

The artisan, the tradesman, the professional man, all are largely dependent on their intellectual acquirements for their ultimate degree of superior success ; and the method of using the period of preparation for the several spheres of duty will largely affect the earning capacity of every student. Increased income, it is needless to point out, involves secondarily other advantages, such as increased social considerations, increased luxury, increased power.

(2) *Increased social consideration.*

This is not dependent solely on a matter of income. The incomes of ministers of religion, University professors, and other teachers often fall below that of a moderately successful tradesman—yet the recipients of the smaller incomes often enjoy a higher degree of social distinction, as a form of tribute to certain mental acquirements. Social consideration is also often responsible for the ambitions towards discoveries and inventions displayed by professional men as well as creative artists.

(3) *Pleasurable occupation in higher degree.*

Though a clerk's work may not be really loftier than that of a slaughterman, yet it is decidedly

more pleasant ; or if we compare the respective duties of the engine-driver of a railway train and the station booking-clerk, we can have no doubt as to which is the less disagreeable and as to which would be universally preferred if the wages were alike. In such cases as these the difference in emoluments is considered to be fully compensated by the more favourable nature of the duties.

(4) *Increased capacity for being of use in the world.*

Quite apart from any material benefit, not a few highly developed and gifted persons often are found capable of immense self-denial, the most fatiguing and absorbing research, for no other reason than that of benefiting the community. In every department of art, science, and literature are such to be found, and if their ideals and aims are too lofty and disinterested to appear real to those of more sordid ambitions, yet their life and works are such as teachers can nevertheless hold up for imitation and example with never-failing tendencies for good.

41. Such considerations as these are, however, too remote to be of much avail in teaching the extremely young, though they are typical of the arguments and inducements that a skilled teacher will use when it is necessary to apply a

mental stimulus to flagging energies, and may be used in any appropriately modified form for those approaching adolescence, with due discretion.

42. Motives for voluntary mental exertion at the earlier stages of mental development are generally conveniently summarised as a system of rewards and punishments. Firstly, small gifts are awarded, succeeded by indulgence in such forms of enjoyment as are appreciated of a non-material nature, which a teacher can easily devise, when it is evident that a distinct mental effort has been made and fairly sustained.

Secondly, a little later, it will be found that the love of approbation is a still more effective as well as higher form of stimulus.

There are very few individuals who are not susceptible (or who have not been susceptible) at some point or points to the opinion of others, and particularly to the opinions of those whose position in some way or other causes them to be valuable. Even domestic animals exhibit marked sensitiveness in this respect; and they are quite capable of distinguishing praise from blame. This power of meting out praise or blame, if used aright, is one of the most potent influences of a teacher. Neither praise nor blame should, however, be frequently or indiscriminately awarded; and if it is a fault to be continually reproving or blaming,

it is equally a mistake to flatter perpetually or continually.

Fault-finding in the presence of others is rarely justifiable ; it is humiliating to the student, and if persisted in generally produces sullen indifference. An abstention from remark, an absence from comment, is often much more effective ; while on the other hand, a word of two of praise for exceptional effort made in the presence of others, especially when rarely employed, has the most inspiring and encouraging effect upon even the dullest and most apathetic. It is worth noting that teachers as a whole tend to divide themselves into two classes in their treatment of pupils—those who blame too much and praise scarcely at all, and those who praise everything almost equally and unreservedly ; it is rare to find an untrained teacher who holds the balance fairly in these respects.

In this connection may be mentioned the great influence that parents have or may have upon the intellectual progress of their children.

A sympathetic interest and regard, if evidenced only by occasional enquiry as to condition and nature of the studies in hand, does much to support the work of a teacher without interfering with it. Some teachers have an apparent aversion to any interest being shown by the parent in the student's intellectual life, which they appear to imagine

tends to weaken their own influence. It may safely be said that where one instance of this takes place there are many where the interest and authority of the parent, if intelligently used, would materially assist the teacher.

Thirdly, a taste for intellectual distinction can be contrasted with that of physical superiority. It is more creditable to be able to play the piano or violin with distinction than to have the highest cricket average in the school, *because it is more difficult*; the difficulty being increased by the attitude popularly adopted as to the comparative importance of physical and mental training. The "standard of distinction," as it may be called, should really depend on the relative difficulty, combined with "the value in use," of the tests employed.

Given an equal degree of physical health and robustness, and the same amount of general intelligence in two different persons, there can be no question that, as it is more difficult, if more pleasurable intellectually, to become an acceptable author than a good golf player, so the former accordingly should be given the greater honour.

Fourthly, one of the values in use of increased mental culture is the pleasure given to those intimately connected with the possessor through the

mere consciousness of its existence. It is not to be expected that a child can fully comprehend the satisfaction which his success in any capacity conveys to his parents ; but if parents and teachers, instead of carefully concealing their emotions, at least evidenced their satisfaction when occasion serves, they would without in the least necessarily making their children "priggish" or conceited tend to encourage one of the purest and best motives for exertion in existence, that of "being of some use to others."

Enthusiasm (guided by knowledge of law) is a necessity for successful teaching. Enthusiasm uncontrolled, however, is often capricious, fitful, and spasmodic, and more disastrous than a want of spirit of initiative and imagination.

Other requirements for a successful teacher may be conveniently summed up as temperamental characteristics : Not too hasty or impulsive, not too tardy, not too demonstrative and not too cold, not too nagging and yet not too loose, enthusiastic yet not visionary or unpractical, methodical yet not a slave to a system or method, free from fussiness and self-assertion on the one hand and undue self-depreciation on the other, endowed with power of interesting the pupil.

43. Here is now a summary of some of the

principal considerations which affect a teacher's work and influence :—

(*a*) That right and complete knowledge is the indispensable preliminary to right action.

(*b*) That teaching to be effective must be a blend of science and art.

(*c*) That technique is only acquired by repetition and experience.

(*d*) That the educational end can only be achieved if erected on a sufficient base of physical and mental vigour, duly trained in analytic and synthetic directions.

(*e*) That education is carried out through the nervous system—composed of structures responsive to stimulus.

(*f*) That the nervous system is broadly divisible into two kinds.

(*g*) That the brain is capable of development under certain conditions.

(*h*) That the functions of mind are, broadly speaking, threefold.

(*i*) That the development of the mind depends upon the degree of reticulation of the nerve-fibres, which can be largely increased by voluntary effort.

(*j*) That memory is a voluntary or involuntary recalling of past experiences and impressions.

(*k*) That "specialism" is the result of re-

peated effort in one direction; but that universalism does not exclude specialism.

(*l*) That specialism can only be successfully undertaken at comparative maturity; and that an undeveloped intellect cannot effectively distribute its energies over many subjects.

(*m*) That if knowledge has to be transformed into action of any complex kind, repetition with intelligent aim is necessary.

(*n*) That a teacher must recognise the bearing that temperament, heredity, individuality, and environment have on his own attitude and that of the pupil.

(*o*) That there are mental stimuli (to be used with due discretion) as well as physical stimuli.

CHAPTER II.

ON GENERAL MUSICAL PERCEPTION.

44. MUSIC as an art appeals primarily to our emotions through the medium of the aural nerve.

The sensitiveness of the aural nerve varies not only in different individuals, but also is not equally developed in all directions in the same individual. There are many persons capable of hearing the slightest sounds who are quite unable to perceive any difference between one melody and another, unless they be performed at varying degrees of speed, or different degrees of force (especially the latter); whilst some cannot recognise the same melody as identical if it be played with varying pace or force. Women as a rule seem to have more acuteness of ear, so far as a capacity for hearing very faint sounds is concerned, than men; but it is not usually so discriminative as with men — its specialisation in separate directions seems to be more difficult. Those engaged in outdoor pursuits often develop extraordinary acuteness in hearing in special directions without any great discriminative power or high degree of

general culture in others, such as is exhibited by various tribes of Indians, or in our own country by sportsmen, gamekeepers, and others, who can readily perceive and distinguish sounds which would be quite unnoticed by the ordinary ear.

There are cases in which the perceptions for musical sounds vary in intensity not only in different individuals, but in the same individual.

Professor Tyndall points out that the ear's range of hearing is limited in two directions. Savart fixed the limit for low sounds at eight *complete* vibrations per second and for higher sounds 24,000 vibrations per second. Helmholtz in his experiments fixed the lower limit at 16, and the higher at 38,000 vibrations per second, embracing about 11 octaves. But it is obvious from these differences alone that the capacity varies greatly.

Dr. Wollaston relates the case of a person who could not hear the sound of a small organ pipe well within the ordinary limit, whilst others have a distinct perception of sound six octaves above the middle E of the pianoforte.

Professor Tyndall also points out that the squeak of a bat, the sound of a cricket, the chirrup of a sparrow (about six octaves above middle E of the piano) are entirely unheard by many persons. The range of musical sounds in use extends over about seven octaves, comprising 40 to 4,000 vibrations

per second, and it is by no means incompatible with extreme sensitiveness within these limits, that there is no perception whatever of sounds above or below them.

45. It is no part of the object of this work to enter into any physiological explanation of these facts. It is sufficient for us to know that there is a limit both upwards and downwards as to the capacity for hearing musical sounds; that this varies in different individuals; that acuteness of hearing as a whole is not necessarily discriminative in detail; that great sensibility and discrimination in detail in some directions is not incompatible with comparative perceptive dulness in others; and when the attention and intelligence are especially aimed continuously in the same direction, that great discriminative ability is evolved, even if the general culture and intelligence be not of a very high order.

46. These facts form the basis on which Aural Training—an essential part of a musician's equipment—is possible.

(The phrase "Ear Training" means, of course, the same thing; but it has rather an ugly sound, and, psychologically speaking, is absurd, suggesting as it does the training of the instrument rather than the guiding intelligence.) It is at least equally necessary for the musician to be able

to "see with his ears" as to "hear with his eyes"; and though it is obvious that the ultimate possession of both faculties in their full and complete perfection is dependent on their separate development, yet it is equally true that unless the perceptions are continually exercised both analytically and synthetically—through the eye as well as the ear—with their mutual perceptions directed to a common end—no useful, permanent, practical effect is to be attained.

47. The general tendency of instrumentalists is to associate pitch with position or locality, the printed signs conveying more the impression of the place where the notes required are to be found than any very clear conception of the pitch itself, and especially is this the case with performers on keyboard instruments. Vocalists, on the other hand, having no necessity to use pitch in any connection with a visible physical action, principally regard it *relatively* as affecting successive melodic intervals in regard to interval and tonality, and often have considerable difficulty in associating a written sign with any definite pitch at all.

In the first-named type—such as that of the numerous pianists capable of executing all forms of scales with clearness and ease, and yet unable to discern, say, the harmonic from the melodic form of a minor scale when played by another person—

it is clear, whilst the volitional element has been well trained and exercised, yet that the phases of sensation and perception which form portions of the emotional and intellectual elements are almost entirely dormant. In the second type of case, where singers fail adequately to realise the effect of a written passage, and are unable to execute it until they have heard it, it is clear that, though there may be present a considerable amount of capacity for sensation and feeling, yet there is little intellectual development and no great power of volition.

48. The great aim of the teacher of music is to train and develop, as nearly as may be equally, the capacity for feeling and perceiving, and the power of expressing. As musical performers are principally called upon to manifest the emotions of other persons than themselves, it is plain that there must be some means of more or less accurately conveying the intentions of the composer to the executant, and this further implies that the executant must be familiar with the notation employed.

49. Aural Training, therefore, in its fullest sense, implies more than power to reproduce sounds previously heard, for this in a greater or less degree is possible to all grades of intelligence, through the mere power of imitation. Now power of imitation is not, psychologically speaking, a highly advanced mental acquirement. It is a faculty

possessed by many of the lower animals, and not a few imperfectly developed intelligences. Idiots often possess it in a high degree, as do also, as is well known, quite young ordinary healthy children. At certain stages of mental development, and for the creation of new ideals and the setting up of new standards, a teacher will by no means ignore the importance of cultivating the imitative faculty; but he should beware of regarding this as more than one of the small tools to be used in manufacturing a musician.

50. Complete Aural Training includes, further than the above, at least one essential requirement more—*the ability to express in notation that which is being heard.* Our present system of notation is, of course, far too cumbrous to allow anyone to write music dictated at all rapidly; but the power to do so, bar by bar or chord by chord, is a necessity for the complete musician.

In proportion to the degree in which this faculty is possessed, so is its correlated faculty—that of conceiving the exact effect of a written passage—also possessed. Of the two it is probably easier to conceive the general effect of an unheard passage than to write down the passage if heard; there, as elsewhere, the greater includes the less. It does not follow that a fair ability to "hear with the eye" implies also accuracy in writing down from

dictation ; but the power of accurately writing down sounds in their due length, and correct as to pitch, *does* entail the ability to conceive mentally. The position is very much that of students of languages, if taught logically and naturally. A child teaches himself his mother-tongue by habits involving observation, perception, and imitation. If language were only used in speech, this would be sufficient, and it would be unnecessary to read and write. But some languages are practically never spoken—they only exist in writing ; and for these it is sufficient that they be learnt through the eye and the intellect, though it is a very lengthy, dry, and wearisome task. Living, personal languages are, however, never successfully so taught ; and even if possible it would occupy an immense amount of time. A child a few years old can often express itself clearly, grammatically, and with a very fair vocabulary in its own language before it has learnt to read or write it (page 56) ; but it would be highly reprehensible if the child's education stopped at this point. Nor should we consider the condition of a deaf-mute, able to read and write, but speechless, an ideal one ; any more than that of the blind man, who, possessing speech and hearing, is dependent on various makeshifts for his third sense.

51. For various reasons, into which it is not

necessary here to go, the necessities of our present system, or want of system, of musical training have compelled the adoption of a piece-meal way of dealing with matters that are all really part of a whole. We have divided musical training into theory and practice, placing in the first division all that part of musical art which deals with written or printed matter, whilst the latter is supposed to concern itself entirely with executive ability. The result often has been that a large number of the boys and girls who learn music as children musically resemble the deaf and dumb man on the one hand, or the blind man on the other, and abandon all study of music as soon as the exigencies of school or home life permit, alike discouraged, disgusted, and demoralised. If all the elements of music—by which is *not* meant the *signs used in notation*, but rather such points as Accent, Rhythm, Pitch, Tone, &c.—are studied concurrently, and progress approximately regulated in each proportionately, we get a real foundation well and truly laid on which to build our superstructure according to the fancy and desire of the builder.

CHAPTER III.

AURAL TRAINING IN REGARD TO SOUND DURATION AND PULSATION.

52. LEAVING entirely out of our consideration for the time being all questions of notation, we may summarise the material of which modern music is composed under three headings—Time, Tune, and Rhythm, each of which contains several subdivisions. Time * includes not only the absolute but also (chiefly) the relative values of

* It is not here necessary to consider the secondary meaning the word "Time" has, implying degree of movement—*e.g.* "Waltz" time or "Minuet" Time, whereas both are in $\frac{3}{4}$ time. The teacher will be careful, however, if he uses the same word in different senses, to see that the mind of the student is clear as to this. Nothing is more common than for a student to confuse ideas as a result of a teacher's omission to explain that some words have several meanings. The word "Key," for instance (used in connection with the "note" played, and the "key" of the passage in which the "notes" are crotchets, if used without explanation), creates endless difficulties, as does also the conventional use of the term "Bar." It is always necessary for the teacher to ensure that the student attaches the same meaning to words that he does himself. Yet, when there is great disparity between their respective attainments it is sometimes difficult to keep this point in view.

sounds. Sounds may succeed each other in music, generally speaking, in one of three ways only. They may be of precisely equal duration; they may stand in the ratio of 1, 2, 4, 8, 16, &c.—*i.e.* a sound may be either one half, quarter, eighth, or sixteenth of another sound—or they may stand in the ratio 1, 3, 6, 9, 12, &c.—*i.e.* a sound may be either a third, sixth, ninth, or twelfth of another.

(*a*) Such points as these, however, involve the consideration of comparatively late developments in musical art. The germ of all time-groupings lies in simple regular pulsation. The more primitive communities, and the younger units of civilised nations—between which as to mental development a considerable parallelism exists—are both capable of perceiving and receiving pleasure from the regular recurrence of pulsatory sounds, quite apart from any subdivisions of beats or their association with musical sounds or tone. The power of discriminating between different tones or pitches, or different *timbre*, is only acquired much later: it is built up partly through heredity and largely by environment and trained attention. The appreciation of regular pulsatory impressions belongs, as M. Lussy says, rather to the instinct than to the intelligence; it is innate, and, considering that it is the more readily

perceived and employed in proportion as it bears some proportion to the rate of the heart-beat of the listener, would seem to be indeed a consequence of the synchronising more or less of the motion of independent bodies. Dr. Sully points out that children of only eighteen days old have been known to manifest pleasure on hearing regular pulsations; and he states that there is almost certainly a capacity for the enjoyment of lively music during the second half of the first year of life.

(*b*) It is during the earlier surroundings of a child's life that the musical ear is especially formed. The unconscious training of the sensitive perceptive element produced by the constant hearing of music at this tender age, long before systematic training as a musician, results in what we call an ear for music ; and fortunate indeed is the teacher who is able to commence with a pupil already sensitive to sounds, yet not committed to bad habits in regard to execution.

(*c*) An "ear" for time is, generally speaking, very much easier to create than an "ear" for tune, and it can certainly be accomplished at a much earlier age. There are, of course, many adults who, though they may have been "taught music," neither thoroughly understand notation of time nor are capable of executing it ; but this is principally the result of faulty training, since by experiments it

has been sufficiently established that the perception of regularity in pulsation is rarely absent in ordinary intelligences.*

A fundamental educational maxim refers to the importance of not giving things names until the objects are familiar, nor of showing the sign or symbol before, or even simultaneously with, the object it represents : " Teach the thing before the sign." A violation of this principle is a common fault of early lessons in instrumental music, equally with the attempting to teach too many things simultaneously. "One thing at a time," is a maxim laid down by the great educationist Ratke, nearly 400 years ago. It is a common thing to find teachers teaching the names of the keys in their connection with the staff long before the mind of the student has thoroughly grasped the first, or is ripe for the second ; and in the same way a teacher often imagines that he or she is teaching time, when it is really only notation. Unless the teacher and pupil

* It must not be forgotten that, to an untrained mind, the striking even of a single note on the pianoforte is by no means the simple thing it appears to a teacher who has no power of introspection or has long outlived the recollection of his own childish processes. He has perhaps to decide on the name of the note as expressed in notation ; he then has to find its locality, decide as to which finger to strike it with, and finally to think of its duration. Any action involving complex relations such as these can only be acquired thoroughly and completely by attacking one point at a time, then adding another, and subsequently another, till all hesitancies and confusion of thought are swept away.

both fully realise that time or tune is something expressed in *sound*—which must be perceived, felt, and manifested previously to thinking of the signs expressing it to the eye—the real foundation is not well and truly laid. Young children under favourable environment often have a considerable vocabulary and a high degree of conversational ability before they can either read or write (page 50); logically, therefore, as well as practically, the perception of time must precede the study of the elements of notation. Teachers who take their pupils straight to the pianoforte or other instrument without any previous training in this respect foredoom themselves to failure—in all probability also ruining any chances the student may have had by inspiring disgust and hatred of a subject which, properly treated, is a source of delight and enjoyment from the first.

53. We can now study time in fuller detail. Mention has already been made of the dire result of confusing the analysis of sounds with the teaching of signs.

A feeling for time is quite another thing from a knowledge of notation. Many people quite aware of the *relative values* of certain signs used in notation have no abstract conception of their *relative effect.*

One reason for this is that the mere name

we give to a symbol—such as crotchet, semibreve—in itself conveys no meaning at all; and the other names—whole note, half note, quarter note, &c.,—are even more misleading and confusing.

The basis of all time-perception is the beat, count, or pulse. (The last word in many ways expresses best the *throb* of regularly recurring sounds: the first word referring to something visible, and the second to an arbitrary arithmetical process, which is not necessarily part of the perceptions involved.)

J. J. Rousseau was the first to proclaim this great fact and to show how the beat may be broken into divisions representing duplets and triplets, which, again subdivided on the same principles, produce all the varieties of rhythmic outline known to us; and it is greatly to be lamented that composers from his time until now, did not adopt some one note as the beat-unit for all compositions, and content themselves with the intimation as to whether the music is in duple or triple time. Performers are not much wiser for being told through the Time Signature that the music is in $\frac{12}{32}$ time (Beethoven's Pianoforte Sonata, Op. 111) or $\frac{24}{16}$ time (Cramer's Pianoforte Study No. 31) or similar cases. When they have mentally translated them into their simpler equivalents, as they invariably do, they are naturally inclined to say "Cui bono?" Time signatures, as often used, seem designed to conceal from the performer that which he ought to know, and to inform him only of that which he can see for himself.

Early lessons in music should confine themselves largely to the cultivation of the instinct for recognising these recurring impulses by the ear, and the manifesting of its possession.

The first lessons in time should include the development of the sense of regularity in pulse in both its analytic and synthetic forms. A child should be able, after the phenomenon has been duly explained in suitable language for its comprehension, to recognise regular pulsation—to manifest his perception in action—not necessarily at the keyboard, but by marching, clapping hands, or beating time to different pieces played by the teacher in varying degrees of rapidity of pulse. Those who have attended Kindergarten classes, taken part in "rote" singing or any form of musical recreation at home, will show remarkable aptitude in these respects; and in proportion to the degree that such perceptions are cultivated by the teacher is the measure of his ultimate success. In cases where no favourable influences have been at work it may take some time before they are established. On no account must the symbol be presented too early; this is ruinous. Symbols may imply both pitch and duration: to realise these and to think of two things at once is too much to expect of young children at the outset.

54. The first step, therefore, is to create perception of regular pulsation. In addition to the clapping, marching, or dancing, spoken of above, a capacity of recognising pulsation quite apart from interval or time is to be encouraged.

Simple regular pulsations thus:

 &c.

should be contrasted with irregular ones:

 &c.

until a discriminatory power is set up and the student able to execute regular pulsation. (Of course, it is understood that the notation above is only intended for the guidance of the teacher; it is not to be shown to the student. In the same way a ready teacher, or one who has had any Kindergarten experience, will be able to invent ways of making such motions interesting to the child.)

The execution of regular pulsation is greatly facilitated by the introduction of accent or stress. Accent is really of several kinds; here we are only considering the word in its simpler interpretation, as implying greater loudness, and this point should be clearly emphasised. These regularly recurring louder notes should be illustrated in actual music, and also by simple pulsation, either as a monotone on a pianoforte key or by taps on a table. Efforts to render these effects at the keyboard may well form the child's actual first attempts to "play the piano."

An easy and interesting way of stimulating perception of rhythmic pulsations is by encouraging

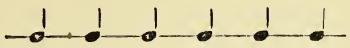
the recognition of previously familiar tunes by their "figuration" alone. A child recognises melodies at least as much by their rhythm as by the intervals; and if the attention is especially directed in the way above named, it is astonishing to what extent discriminative power can be attained by simple taps with a pencil on a table.

From the first it is to be pointed out that these regular accents recur in one of two forms—either in "twos" or "threes"—and that no other way is possible; and this should be illustrated by drawing attention to the difference between a waltz and a march, &c. &c.

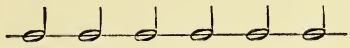
55. When a child can manifest its knowledge of this effect in action in even the lowly form of technique just suggested, it may be possible to introduce the elementary study of notation.

56. We may commence with the proposition (not self-evident to the child) that when it is desired that notes *in succession* shall be all alike in duration, *composers* (it is advisable to define new words) write signs of similar shape. An illustration of this may now be given. (Some books and teachers lay down a rule that "notes of similar shape are of similar length." This statement should be carefully avoided; it tends to set up an idea that the various notes have an absolute, instead of a relative, value.) Signs like these would represent

sounds alike in duration (if in the same piece or movement) :

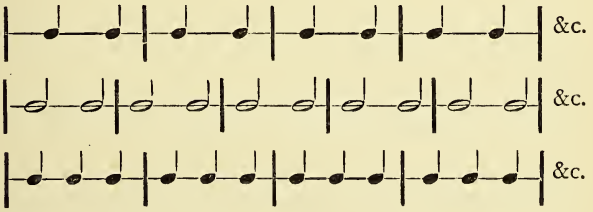


So would these :



or these :

The loudest notes—to be accented—are shown by upright lines placed before them, thus :



The child should execute these, and be encouraged to discriminate by ear whether the accents be duple or triple (twos or threes), a marked stress being given on the first of each group, with a strict regularity as to percussion.

In proportion as the mental perception of accent becomes stronger, so does the power of controlling regularity of pulsation itself increase. This sensitiveness for recurring accents, whether in duple or triple groupings, forming as it does the whole foundation of an executive artist's equipment,

cannot possibly receive too much attention. The slight variations of *tempo*, the subtle departures from the normal, inexpressible in notation, all forms of *rubato*, used by the best artists and most advanced performers, are only effective when the executant is imbued with the most perfect sense for regular pulsation, and therefore able to exaggerate or diminish the values of certain beats in such degree that, whilst the divergence from the normal is *perceived*, yet the normal itself is not obscured.

The generally received description of Chopin's use of rubato, where we are told that "the left hand keeps perfect time, whilst the right hand indulges its fancy," is probably based on incomplete information, for, excepting in some special form of passage, such treatment would result in absolute cacophony. Nor is the further Chopin quotation, "the left hand is the conductor of the orchestra," necessarily a confirmation.

The Rubato of Chopin is thus described by Liszt: "Suppose a tree bent by the wind; between the leaves pass the rays of the sun, a trembling light is the result, and this is the rubato."

Moscheles, in speaking of the rubato, says: "Chopin's manner of playing *ad libitum*, a phrase which to many signifies deficiency in time and rhythm, was with him only a charming originality of execution."

The truth is, without doubt, that a variation in that we expect or desire or are accustomed to, is often pleasurable; but it is only when the divergence is in slight degree. A degree of variation or divergence beyond a certain point is absolutely distasteful. As Dr. Crotch is reputed to have said, "Before we can venture to play *out* of time, we must be able to play *in* time."

57. Sensitiveness as to regularity of pulsation and discrimination or perception of accent forms

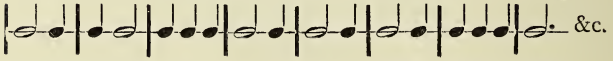
the foundation, therefore, not only of the musical effect known as Rubato, but also of clearness and precision in all rapid passages and complexities of rhythm. A recognition of this fact is the underlying principle of the Virgil Clavier method for pianoforte study: by the systematic use of the metronome, and a keyboard which substitutes silence for duration and defines very precisely the commencement and termination of key depression and release, the perception for regular pulsation and accent by stress is stimulated and encouraged. The especial charm of rapid passages, scales, &c., is therefore quite as much a matter of aural training as of muscular power; and one reason why rapid passages often sound better on a mechanical piano than when played by a living player is that, whilst temperament and feeling may be evidenced by the latter, there is a lack of aural discrimination or volitional power on the one hand to set against the absolutely accurate *attackings* and minutely observed *quittings* on the other.

58. After perception of simple pulsation and recurrent accent in groups of both two and three has been thoroughly established, the next step—that of setting up a perception of the *relative* values of sounds—will be easy. In its simplest form, this will take the shape of a prolongation of a sound for *two* beats, pulses, or counts, instead of

one; the accents, as before, recurring either in twos or threes:

1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
ta-aa ta ta ta-ta ta-aa &c.

(To be said aloud when playing)



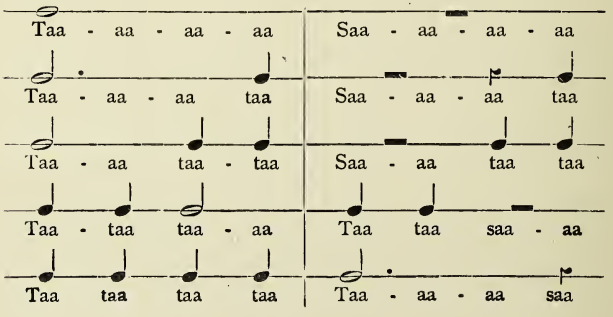
1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3
ta-aa ta ta ta-aa &c.

The French time-names* will be often found

* The French Time-names (styled by the inventor, M. Paris, "Langue des durées") are based on the relations which single sounds or grouped sounds have to the unit—a Beat or Pulse. They deserve more general use than they have been accorded, for by their adoption the "figuration" of the passages, rather than the names of the separate signs, is impressed on the mind, and the identical nature of passages not at first sight synonymous is strongly emphasised.

Assuming that the beat-unit is the sign known as a crotchet, the method of employing the Time-names is shown by the following (the syllable "Taa" representing the Beat, and "Saa" a silence of one Beat).

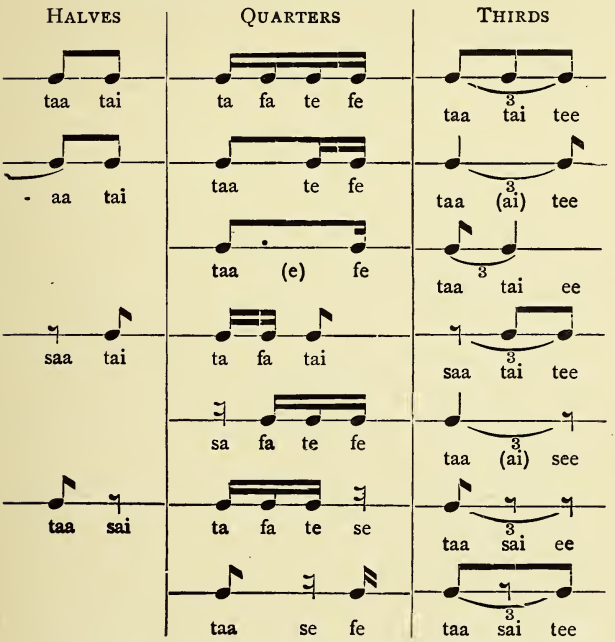
Representing Beats or Pulses and Prolongation of Pulses (silent or sounding):



easier, however, than counting, for not only has the arithmetical succession itself to be remembered,

Representing divisions less than Beats:

(It has not been thought necessary to indicate here divisions of Beats more minute than Fourths, though M. Paris provides for all those possible.)



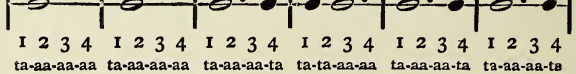
("Ai" as in *maid*; "aa" as *a* in *father*; "a" as in *mad*; "e" as in *led*.)

There is some discrepancy in the way the subdivisions of the Beats are indicated by different authorities; those given are nearly in accordance with the system used by Mrs. Curwen in the "Child Pianist." The names are also here written phonetically, and not as originally spelt by the inventor.

but some difficulty is created through the fact that the count numbered three is an accented note in one kind of time and unaccented in another. It is not uncommon to find children using this system playing difficult rhythms at sight before they know printed figures or are able to read prose.

If the habit of *counting* be used here instead of the French time-names, the student must be made clearly to understand that the counts are used simply to assist in *measuring* off the relative values of the sounds, and that the important point is that the counts *numbered one and three* are accented and the remaining two are unaccented if there be four pulses in a bar, or that the count *numbered one* is accented and the remaining two are unaccented if there be three pulses in a bar.

59. The next step would be the recognition and execution of a sound prolonged still further—over three beats expressed in musical notation by a dot: also four beats, counts, or pulses. (The dot used as a sign for prolongation of a half-pulse should not be introduced at this stage, but the effect of prolonging a sound by half its value—in this case a whole beat—must be sufficiently made clear:)



Provided that the sense for accent has been duly nurtured, there will be no difficulty in executing such passages as the above, but care must be taken to see that, although the prolongation in some cases eliminates an accented beat, yet that it is still perceived and felt in the counting, &c.

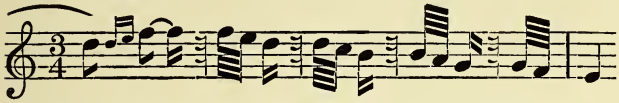
CHAPTER IV.

AURAL TRAINING (*continued*): THE SUBDIVISIONS OF THE BEAT.

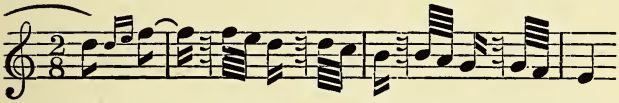
60. THE next step would naturally be that of the recognition as a musical form by the ear, and execution on a monotone, of the half-beat or half-pulse note. The symbol, as before, should not be shown until the effect is familiar; and when it is, the unit or beat should be always at first that of the crotchet, which is, on the whole, the most universally used beat-sign. (There is no real reason, apart from sentiment, why many different time-units should be used; and happily the tendency of modern writers is more and more uniformly to adopt the crotchet as the time-unit.)

Beethoven was one of the most erratic composers in this respect, though some of Mozart's slow movements almost rival Beethoven's in apparent complexity—a complexity, be it observed, of a purely artificial and *notational* nature, and not inherent in the music itself. Beethoven sometimes uses different time-units for each movement of the same work. In the opening movement (Allegro molto con brio) of Op. 7, for instance, the signature is $\frac{6}{8}$ containing no notes shorter than semiquavers; in the next (Largo con gran espressione) the time signature is $\frac{3}{4}$ with four-stroke notes,

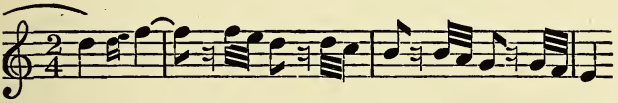
semidemisemiquavers,  , as the quickest notes. As a result, we find the average student has the greatest possible difficulty in comprehending the effect desired in such a passage as this :



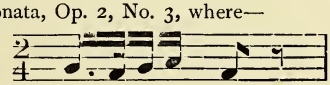
If this movement were written in $\frac{2}{8}$ time the passage would appear perfectly clear; and if the student so conceives it in his mind it will be much more readily performed. It would appear thus:



This, it will be observed, alters none of Beethoven's time-values. Still more clear would it be if it were written in simple duple time, with the crotchet as the unit-beat standard :

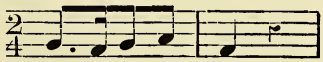


In this particular instance the composer has followed a practice, not uncommon, of expressing in one long bar of $\frac{3}{4}$ time that which is in reality three bars of $\frac{2}{8}$ time. A similar instance is found in Beethoven's Sonata, Op. 2, No. 3, where—



would be more clearly expressed—

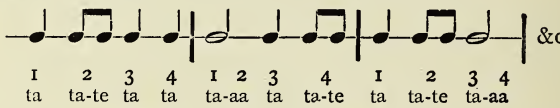
and still better thus :



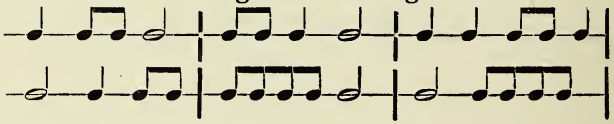
As there is really no other possible way in which accents can occur but in groups of twos or threes (or alternations such as are expressed by the signatures $\frac{5}{4}$, $\frac{7}{4}$, &c.), all music could be expressed under signatures known as $\frac{2}{4}$ or $\frac{3}{4}$. (It is not to be

supposed that the remarks made on Beethoven's methods o notation affects in the slightest degree the power and sublimity of his music, any more than the bad handwriting of a great poe affects the originality and beauty of his poem. "Notation is not music," and the great composers were Musicians first and Educationists only secondarily, if at all; it is the business of composers to create works, and the business of educationists to create workers to manifest the works.)

Half-beat notes should be first introduced on the weak beats of the bar or measure, thus:

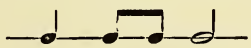


and subsequently on all beats, calling attention to the special and peculiarly vivacious effect they have when occurring on the strong accents:



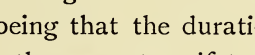
If the perception for accent is—as it should be if developed on the lines suggested—strong and vigorous, it will be quite unnecessary to resort to the somewhat clumsy old-fashioned method of dividing a beat by the interpolation of the word "and." "*One and two, three and four*," &c., is an addition not easy for a child to make at a second's notice, when a divided beat occurs. The French time-name *ta-te*, however, is so readily understood, and gives such little trouble to remember, that its use may be found helpful.

61. It is perfectly obvious, if anything is divided into halves, that there must be two of them. But it is not always made clear to the musical student that, if a beat be divided into two parts, the first part may be sustained or retained from the previous chord, by prolongation, whilst the second half only is repeated, and that this is expressed in notation in two different ways. The present stage is therefore a convenient one for introducing the sign of prolongation called a tie, and explaining how a dot is frequently used as a substitute. This effect, we will assume, has been already assimilated by the student:

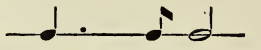


The next step will be to show the effect if the tie be added between the first and second notes, causing a prolongation of one without disturbance of the other.

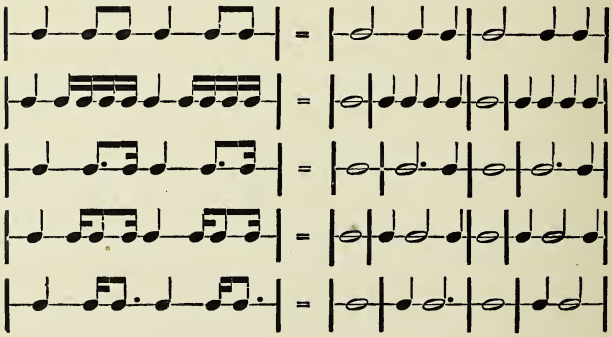
Further than that, as the dot has been already shown to indicate prolongation of a beat, it may also indicate prolongation of half a beat, the effect in each case being that the duration is extended by one half, or three-quarters if two dots be used in succession.



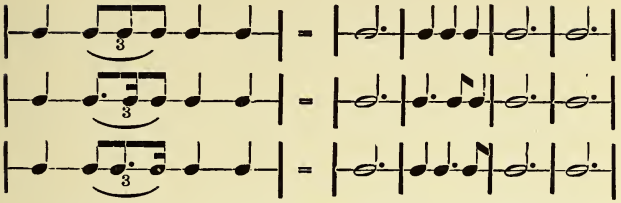
is therefore synonymous with



62. Naturally then follows consideration of the further various ways into which a pulse or beat may be subdivided, forming as it were miniature bars within bars, obeying the same laws as to groupings, accents, &c., as the larger ones of which they form portions. There should be no difficulty in easily comprehending their significance and effect within the beat, if compared with the effect when occupying a bar or measure —the difference being merely of *degree of rapidity* and not of kind. If the conception of the principal accents is duly preserved, the accents and groupings of the subdivisions will easily fall into their proper places. Here are some of the ways into which a beat may be subdivided, together with its synonym expressed in complete pulses:



Ternary Subdivisions.



(The French time-names may be applied to these groupings with advantage.)

It is evident from even a cursory examination of these outlines, that in the binary subdivisions the beat-unit is divided into quarters—*i.e.* two groups of two; and that in the ternary subdivisions the beat-unit is divided into sixths—*i.e.* three groups of two.

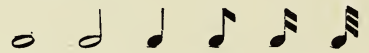
It is not necessary in a work of this kind to discuss fully the exceptional instances where the beat is subdivided into sixths instead of fourths, or twelfths instead of sixths, &c. It is enough to remember that six or twelve notes equal to a simple (undotted) beat must be accented in threes; six or twelve notes equal to a "compound" (dotted) beat must be accented in twos.

CHAPTER V.

DURATION OF SOUND EXPRESSED IN NOTATION.

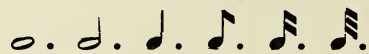
63. We have hitherto chiefly considered the effect *in sound* of the various groupings of notes. We may now more especially think of the principles on which these are expressed by notation.

The signs commonly used to express notation are six in number:



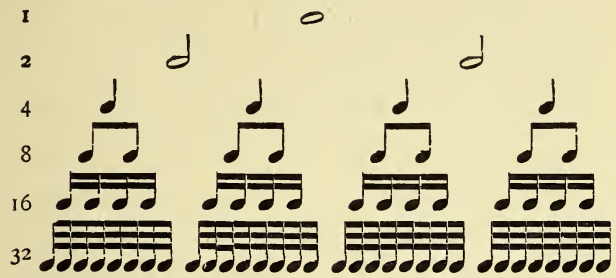
(The teacher will remember that, although it is convenient to have names for these signs, the mere knowledge as to which sign is a semibreve, minim, crotchet, quaver, semiquaver, or demisemiquaver conveys no meaning as to their value, and, of course, their various shapes and characteristics should not all be introduced simultaneously to a learner's eye.)

Each of these, by means of a dot, may be prolonged for an additional half of its value, thus:

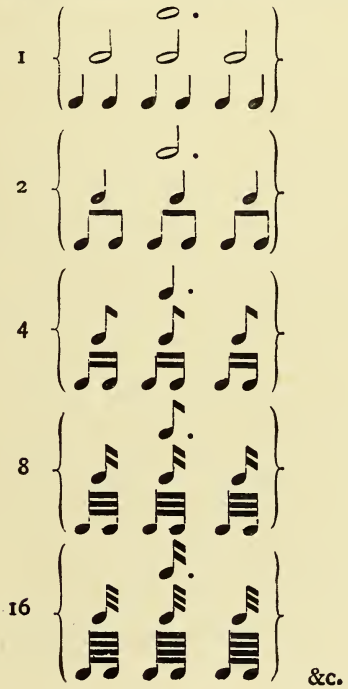


In the case of either the undotted or dotted notes, their ratio or proportion remains the same, increasing and decreasing in the arithmetical proportion of 1, 2, 4, 8, 16, &c. in the case of

undotted and 1, 3, 6, 12, 24, &c. in the case of dotted notes, thus:



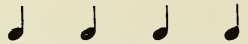
Or:



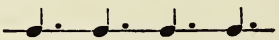
The subdivision of beats represented by undotted notes is usually binary throughout, to whatever extent it may be carried ; the subdivisions of beats represented by dotted notes are ternary, until the subdivision is expressed by an undotted note, when its subdivisions at once become binary.

When the beat has a ternary subdivision it will be expressed usually by the addition of a dot to whatever symbol represents the value of the beat itself. If two or more beats in a bar, each having ternary subdivisions, are expressed in notation, we have what is known as "compound" time.

It is clear that this nomenclature is entirely artificial, since it does not express any new rhythmic pulsation : it is merely a notational way of expressing groupings of two, three, or four triplets or beats having ternary subdivisions in the same bar, thus :



is precisely equivalent in effect to



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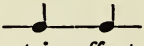
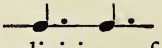
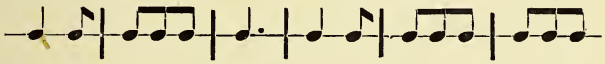


is precisely equivalent in effect to



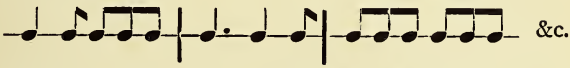
and so on. It is the divisions of rather rapid beats

into triplets that has led to the use of the so-called Compound Time as a convenient way of enabling a conductor or performer to measure off these ternary divisions ; and its use is sometimes preferred by composers when it is desirable to have very smooth flowing effects, free from marked accents, such as would result from using four bars of three beats each instead of one bar composed of four groups of three, it being understood that the first note in a bar always receives a strong accent. Thus :

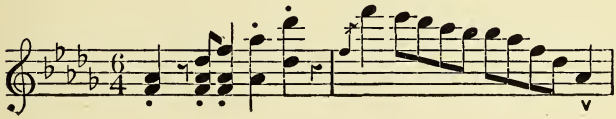


if executed quickly, would require a very rapid motion of the bâton or hand, and, therefore, gradually the custom was adopted of using two or more groups of triplets in the same bar, the first of which only had to be indicated.

The last-mentioned example might, therefore, be written as :



For the same reason Weber's "Invitation à la Valse," written for the pianoforte in $\frac{3}{4}$ time, appears thus in the orchestral version arranged by Berlioz :



Whether the composer uses two, three, or four groups of triplets in a bar depends on whether the ternary subdivisions of the simple twos or threes are at two, three, or four beats distance. "Compound time," therefore, is invariably composed of two or more groups of triplets in the same bar. Both simple and compound time are not, however, necessarily continuously employed even in the same movement or composition; there is a constant passing from one to the other, and for these cursory changes executants are supposed to be prepared. The great things for a student to know are that there is no essential difference *in effect* between simple and compound time; that simple time consists of two, three, or four beats in a bar, expressed in notation by an undotted note, with subdivisions of beats into halves, quarters, eighths, &c.; and that compound time consists of two, three, or four beats in a bar expressed in notation by a dotted note, with subdivisions of beats firstly into thirds, which, if further subdivided, again resolve themselves into binary groupings, though preserving their relation of 6, 12, &c., to the beat itself.

As previously stated (Sec. 60), it would immensely simplify the notation of music if composers were always to use the same sign for a beat-unit; but they have not done so, and matters are further complicated through many musicians

adopting the semibreve (𝅝) not only as a beat-unit, but also as a standard of measurement for all the other notes. As a result, any of the signs given above might be adopted as a beat-unit, and many of them have been so used—producing a complexity in the notation not only entirely unnecessary, but which is not in the music itself.*

* Clementi uses $\frac{3}{1}$ time twice in his "Gradus ad Parnassum." Bizet uses $\frac{6}{16}$ time in the Quintet in "Carmen."

CHAPTER VI.

TIME-SIGNATURES.

64. THE time-signature found at the commencement of every piece of music is intended to show the performer the value of the contents of a bar, taking the semibreve as a unit, and also whether the accents recur in duplets or triplets. Formerly triple time was indicated by the circle (O), the emblem of perfection ; and the half-circle (C) used to indicate duple time is the origin of our sign 𝄵 or 𝄴, often supposed to indicate "common" time.

Usually 𝄵 is now held to signify four crotchets in a bar. When, as follows, 𝄴, it indicates a similar bar-capacity, expressed as two groups of two ; or, in other words, two minims in a bar—one beat being the equivalent of two crotchets, making two beats in all. Rossini uses this sign 𝄶 to express four minims in a bar ; some other composers use 𝄵𝄵 to express the same thing.

65. The figures used as time-signatures need very careful explanation on the part of the teacher, and he must ascertain by constant testings that they are completely comprehended. [A good way of testing this is to employ the student from time to time in adding bar-lines to unbarred melodies,

time-signatures to given bars, and the expressing of the same rhythmical figure in various forms.]

In both simple and compound times two sets of figures are commonly found at the commencement of a piece of music if the sign 𝔊 is not used

The upper figure (or numerator) in simple time is usually either 2, 3, or 4, showing the number of beats there are in a bar; the lower figure (or denominator) gives the length of the note representing a beat as compared with a semibreve, showing us the value of the beat.

Thus:

$\frac{2}{1}$ means two semibreves in a bar (one to each beat),
$\frac{3}{2}$ means three minims in a bar (one to each beat),
$\frac{4}{4}$ means four crotchets in a bar (one to each beat),

and so on.

But in compound time the upper figure (or numerator) only *secondarily* indicates the number of beats contained in a bar and *immediately* indicates the number of notes forming the ternary subdivisions of the beats themselves. If we want to know the number of real beats in a bar we can, therefore, easily ascertain them by dividing the upper number by three, which at once gives the answer.

It is obvious that the upper figure can never be less than 6, though it may also be 9, 12, 18, or 24, &c.

Thus :

$\frac{6}{4}$ means six crotchets in a bar (two groups of three crotchets each),

$\frac{9}{8}$ means nine quavers in a bar (three groups of three quavers each),

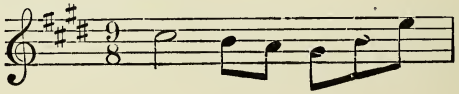
$\frac{12}{16}$ means twelve semiquavers in a bar (four groups of three semiquavers each),

and so on.

It will, of course, entirely depend on the rapidity of the pulses whether the ternary subdivisions of the beat or the beat itself are adopted as the unit for the counting of the bar; and we should remember the admirable rule of M. Lussy: "The more notes there are in a bar, the more beats should be counted in reading it. There should never be more than two notes to the counted beat where the subdivisions are binary, and three notes to the beat in ternary subdivisions."

It may be noticed that both Beethoven and Mozart use 9-time comparatively rarely; there are only two or three instances of its employment by Beethoven in his Sonatas, and Mozart does not employ it at all in his Pianoforte works.

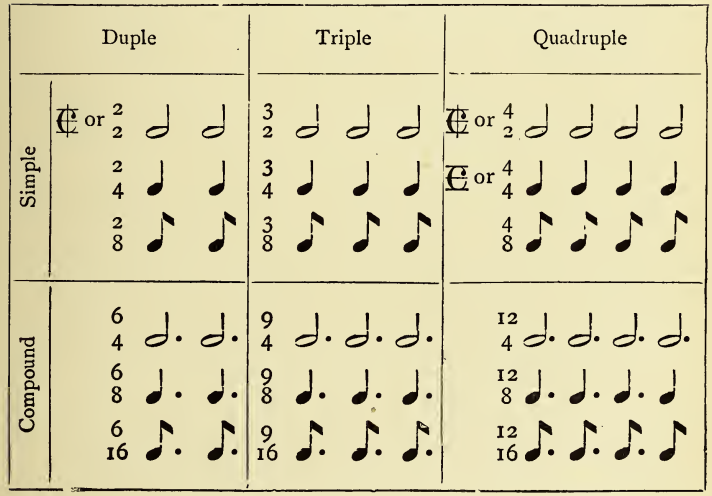
Compound time (being groups of triplets) is usually so written that the ternary divisions are readily seen, and this is always wise and desirable. Such groupings as this, from Clementi's "Gradus ad Parnassum" are not only incorrect, but are often puzzling to students :



which should be written

clearly showing the triplet rhythm.

66. The following table exhibits in a concise form all the usual forms of simple and compound time-signatures. It is not by any means exhaustive, for there are at least fifteen different signatures for simple and twelve for compound times, making in all twenty-seven different ways of expressing such a simple element as one accented followed by one or more non-accented beats.



67. Besides the above, there are other variations of form in which the grouping of binary and ternary accents may appear, though they are of rarer occurrence.

There is quintuple time, made up of one group of two and another of three notes—sometimes the duple group being at the beginning of the bar and the triple at the end, and *vice versâ*. The usual signature for this is $\frac{5}{4}$; but Heller in his Trio, Op. 64, groups the music in alternate bars of $\frac{2}{4}$ and $\frac{3}{4}$ to express the same thing. Tschaikowsky, Arensky, Chopin, and others have also used similar successions of grouped accents; and it may be further pointed out that composers have occasionally not only used the duple and triple rhythms alternately, but have combined them. In Mozart's "Don Giovanni" (Act I. Finale) there is a movement in which three separate orchestras play simultaneously a minuet ($\frac{3}{4}$), a gavotte ($\frac{2}{4}$), and a waltz ($\frac{3}{8}$). Spohr has an even more complicated instance in "Die Weihe der Töne"; and there are others.

This is not the place to discuss eccentricities of composers in respect to time-signatures, beyond mentioning that there is extant a "Prière pour Orgue" in $\frac{4}{4}\frac{1}{4}$ time. Such signatures as $\frac{4}{4}$ and $\frac{2}{4}$ are sometimes used by composers when it is clear that they intend $\frac{8}{8}$ and $\frac{4}{8}$, or, still more accurately, $\frac{4}{8}$ throughout. Nearly all Handel's Oratorio airs in

slow *tempo* are in one or other of these times; even Mendelssohn has not escaped the influence of custom. As a result, inexperienced conductors and teachers often beat four when they should beat eight, two instead of four, &c.

68. The teacher should be careful that no impression is created that a beat or a sign has any *absolute* or *intrinsic* length; it is entirely dependent on the rapidity of the movement. If the metronome marks were alike, a minim in $\frac{4}{2}$ time would have the same value as a quaver in $\frac{2}{4}$; or a crotchet in $\frac{6}{4}$ time would have the same value as a quaver in $\frac{6}{8}$ time.

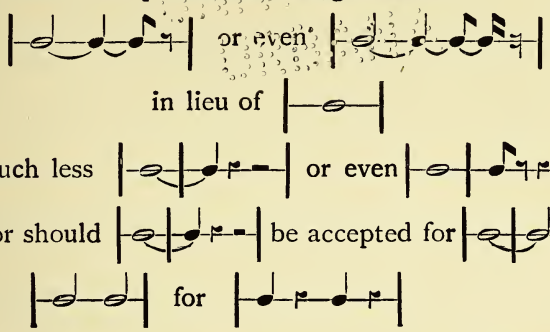
CHAPTER VII.

AURAL PERCEPTION IN REGARD TO SILENCE AND RESTS.

69. WE have seen (Sec. 56) that a keen sense for regular pulsation (the *commencing* of sounds) is a necessary condition for effective *rubato*; similarly we may say that a keen perception for the *terminations* of sounds forms one of the principal elements in the Art of Phrasing.

Although, perhaps naturally, the untrained ear is more sensitive as to duration of *sound* than duration of silence, to the moment of attack rather than to the moment of release, it is a point of the greatest importance that a keen discriminatory sense of each of these latter two points be created. Clear, accurate, and intelligent phrasing is very largely dependent on the way the final notes of each section are quitted, and on the degrees of silence which are introduced between successive notes forming the several kinds of staccato. From the very first efforts at the keyboard (or other sound-producing and sustaining agent), accuracy as to terminations should receive special attention.

If a sound has to be prolonged for two or four beats, the end of the note should be clearly defined. We must not permit for a single moment



In slow time the difference even to a partly trained ear between the above is considerable ; and yet it is rare to find a very keen conscientiousness in such matters even amongst those who are fairly accurate as to the commencing of tones ; the rule being rarely observed that the sound is to terminate *when the next beat is due*, and not at some vague place between the successive beats.

70. There is little doubt that to most people it seems more difficult to estimate the duration of silence than of sound ; and yet, if the instinct for pulsation is properly developed, it is not really so. There is scarcely any better test for pulsatory perceptiveness than the due observance of rests or silences ; the almost universal weakness amongst amateurs, as to terminating sounds accurately, only

being equalled by their similar weakness in commencing sounds if they enter after a rest and especially after a half or quarter beat rest.

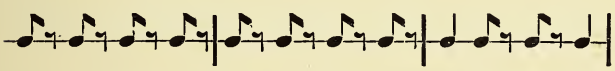
Many pianoforte pieces of the mercantile description are constructed especially to cover deficiencies in this respect. If the accents are "broken up" in one hand (or part) they are always carefully filled up in another, so that having once started in "correct" time, it only requires a small intelligence to "keep going."

A true sense of accent and perception of rhythm is best attained by melody-playing only. Performers on melodic instruments (or instruments producing for the most part single sounds), such as the violin, flute, clarionet, &c., are for this reason generally much better timists than performers on keyboard instruments.

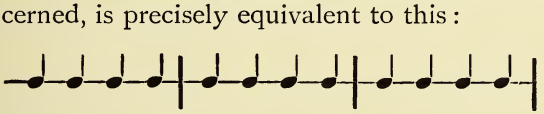
There is no real difficulty in entering after a rest, if the entry is on an accented and undivided beat, nor is there great difficulty in doing this even if there are several rests in succession, if commencing with a full bar or strong accent.

But the pulsatory accent must be *felt* in its proper place, though there may be no sound; reliance is too often placed on a process of *guessing* at the time for entry, or on following accompanying parts with the eye, substituting visual perceptions for aural ones. When, however, a beat is divided between notes and rests, or an entry has to be made on an unaccented beat,

the accented beat being a silent one, there is often great confusion and hesitancy in attacking. In the former instance it is not always made clear to the student that, just as two halves, three thirds, or four quarters make a whole (Sec. 62), so when rests are used a certain portion of the beat is silent; and his first effort must be to ascertain from what portion of the beat they are taken. If a note shorter than, but commencing with the beat, is followed by a rest completing the value of the beat—it implies normal percussion with shortened duration. Thus—



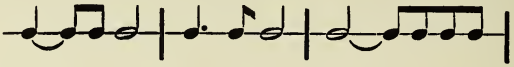
so far as *percussion* or *commencement* of sound is concerned, is precisely equivalent to this:



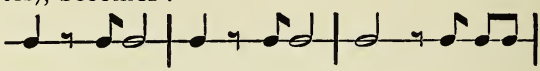
the only difference being in the terminations, where the presence of rests on the latter halves of the beats produce practically mere staccatos.

71. On the other hand, the presence of *rests* on the beat may imply an entry on a non-accent, frequently a half-beat. The following note then will take a stronger accent, the degree of strength varying with its position in the bar. It corresponds to the effect, shown in Sec. 61, of a "dotted

note," with the important difference that for the dot or tied note is substituted a silence. Thus :



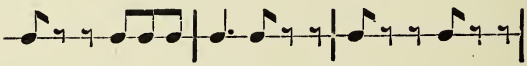
if rests are placed on the first halves of beats (the percussions in each case being alike for the other notes), becomes :



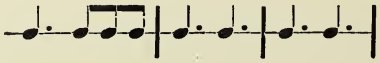
The effect, then, of rests on the *latter* halves of beats is to produce staccatos, the pulsations being regular ; the effect of rests on the *first* halves of beats is similar, so far as percussion goes, to that of dotted or tied notes, only that a *silence* is substituted for the tied note.

If the beat be subdivided into thirds or fourths by the aid of rests—about the smallest time-divisions so used—corresponding to the effect of the double dot spoken of in Sec. 61, when the first part of the beat is silent, the principles are of course the same.

Thus :

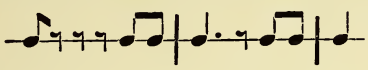


is alike, so far as regards percussions on accents, with



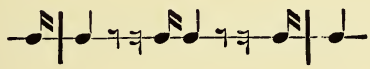
It is only the terminations which differ.

Further, however, should the entries be on the second of the group of thirds, the first of the group must be imagined and felt:

 &c.

If the entry is on the last of the group of thirds or fourths of beats, it is then often more convenient to regard it as occurring as late as possible *before the next beat* rather than at a certain time after the beat before.

Thus, in



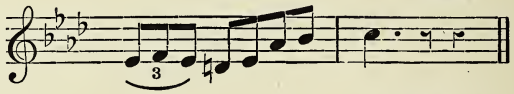
it is quite easy to give the semiquavers their proper place if we regard them as coming *immediately before* the first and third beats rather than *after* three-quarters of the second and fourth beats have expired.

72. Here are now some specimens of the various forms of tests of progress and exercises which a teacher may employ in regard to Time and Pulsation, all of which should be actually performed, and the written signs compared and contrasted. (The teacher will have no difficulty in multiplying such examples from the works of the great masters, and it is of course assumed that a music slate or MS. book forms an essential part of

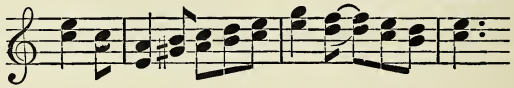
the equipment of a student. The exercises should be suitably graded.)

Add time-signature to the following extracts, afterwards playing :

CHOPIN.

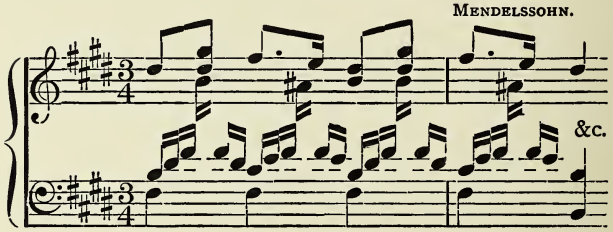


MENDELSSOHN.

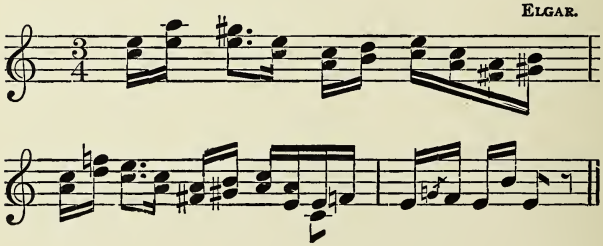


Write out the following so as to express the same effect in duple time without altering any of the notes, afterwards performing from both forms :

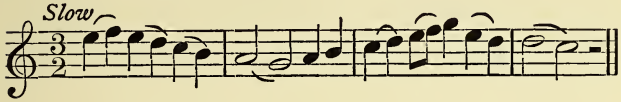
MENDELSSOHN.



ELGAR.

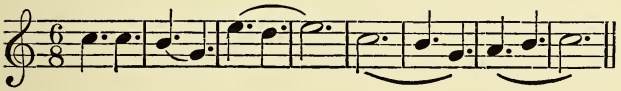


Write out and afterwards play the following melodies in times stated:



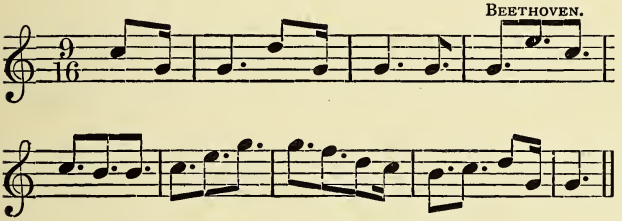
1. In $\frac{2}{4}$ time without altering any of the notes or effect.
2. In $\frac{3}{4}$,, ,, ,, the effect or bar lines.
3. In $\frac{2}{8}$,, ,, ,, ,,
4. In $\frac{3}{8}$,, ,, ,, ,, or bar lines.

(The effect to be expressed here is simply that of binary groupings.



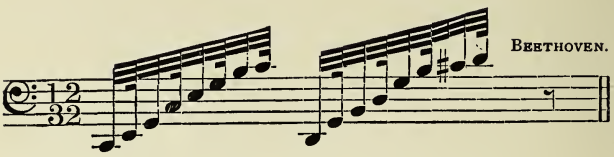
1. In $\frac{3}{8}$ time without altering the effect.
2. In $\frac{2}{4}$,, ,, ,, the effect or bar lines.
3. In $\frac{6}{4}$,, ,, ,, ,, ,, ,,
4. In $\frac{4}{4}$,, ,, ,, ,, ,, ,,

(The effect to be expressed here is simply that of binary groupings.)



1. In $\frac{3}{8}$ time without altering any of the bar lines or effect.
2. In $\frac{3}{16}$,, ,, ,, the effect
3. In $\frac{3}{4}$,, ,, ,, ,,
4. In $\frac{9}{8}$,, ,, ,, ,, or the bar lines.

(The effect to be expressed here is simply that of ternary groupings.)



1. Write the above in $\frac{12}{8}$ time without altering the effect.
2. ,, ,, ,, $\frac{3}{8}$,, ,, ,, ,,
3. ,, ,, ,, $\frac{3}{4}$,, ,, ,, ,,

The effect to be expressed here is simply that of ternary groupings, each group corresponding to the "bars within bars" spoken of in Sec. 62.

It may be noted, however, that the composer has not followed the usual practice in assigning his time-signature. He has, apparently, "totalled" the contents of each group, taking this as four demi-semi-quavers. If the time-signature conformed to the general custom it would be the somewhat eccentric one of $\frac{36}{64}$!

It will be seen that nearly all the complexities, doubts, and difficulties which our present system of notation of time entails would be avoided if one sign only were used for the beat-unit universally (which sign should be about intermediate from the longest and shortest sounds, such as "a crotchet"), from which the ratios 2, 3, 4, 8, or, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{6}$, $\frac{1}{8}$, could be easily realised, and if our time-signatures were logical, and also accurately used.

CHAPTER VIII.

AURAL PERCEPTION IN REGARD TO TUNE OR INTERVAL.

73. THE mutual relations of sounds as to pitch are more arbitrary than their relation in regard to duration. Duration, measured by pulsation, has its genesis in the heart-beat ; the relation of sound to sound (the interval of the octave perhaps only excepted, its vibrations standing in the proportion of 1 to 2) has no naturally fixed and determinate connection. While time, therefore, is based on physiological and physical facts, tune is principally the result of education : one is more or less natural and innate, the other is artificial and acquired.

The sounds intermediate from a given pitch to its octave have varied, and still vary, amongst nations. The scalar systems of the old Egyptians, Greeks, and the Eastern and Western nations of the present day are all variants of the possible intervening sounds between one note and its octave. The variations depend not only on the number

of intermediaries in the octave, but also on their distance from each other. The ancients, as well as some modern Asiatics, use intervals smaller than those known to Europeans as semitones; as a consequence, much of their music is to us unintelligible, just as ours is to them.

Through the influence of British military music in India, and similar causes, European ideas of tonality are, by degrees, becoming impressed on the natives; but even a few years ago, when it was proposed that the English National Anthem should be adopted and used by the Hindoo children, it was discovered that it was practically impossible to get the notes sung in accordance with our notation or intervals: not, be it observed, because their aural perceptions are inferior to ours, but for the same reason that we could not popularly use their intervals—the difference in our respective created senses of sound association.

As a rule, European music is unmeaning to a savage, whilst his is to us mere cacophony. A sense of beauty, whether of things material or immaterial, is purely the effect of education and environment; it is the result of culture, and is not of "a special nature inherent in the mind" (Darwin).

It is not alike even in the different nations of the same race; and according to Dr. Seemann

("Journal of Anthropological Society," Oct. 1870) it is doubtful "whether even amongst the nations of Western Europe, intimately connected as they are by close and frequent intercourse, the music of the one is interpreted in the same sense by the others. By travelling eastwards we find that there is certainly a different language of music. Songs of joy and dance accompaniments are no longer, as with us, in the major keys, but always in the minor."

74. We have already seen that the sense of Pulsation, Time-duration, and Rhythmic outline is a primitive instinct (Sec. 52 (*a*)). That it is a prior phase of musical development to a capacity for tune is shown by its comparatively early possession in the cases of ordinary children (whose mental evolution corresponds, generally speaking, with the history of racial development as a whole). Similarly, it is shown by the appreciation of musical sounds in the more or less advanced forms of organic life other than man. Darwin says: "Insects and some few spiders are the lowest animals which voluntarily produce any sound, and this is generally effected by the aid of beautifully constructed stridulating organs. The sounds thus produced consist, I believe in all cases, of the same note repeated rhythmically."

The auditory hairs with which Crustaceans are

provided have been seen to vibrate in response to musical sounds; as also have the antennæ of gnats. As we ascend the scale of mammalian development, so is the capacity for appreciating differences in musical sounds increased, until we reach the *Hylobates agilis*, an ape having many characteristics in common with man. According to Mr. Waterhouse ("General Introduction to Natural History of Mammalian Animals," by W. C. L. Martin), this gibbon, possessing an extremely loud but musical voice, appeared to him to ascend and descend the musical scale in exact half-tones, and he was sure that the highest note was the exact octave to the lowest; and he continues: "I do not doubt that a good violinist would be able to give a correct idea of the gibbon's composition, excepting as regards its loudness." Professor Owen, who was a musician, confirms this view, and says that this gibbon, "alone of brute mammals, may be said to sing."

75. Were it not beyond the scope of this work, it would be easy, and in some respects profitable, to trace the evolutionary process by which the gibbon, in arriving at his chromatic scale, proves the general truth of the assumption that in proportion to the complexity and age historically of the organism is the discrimination of degrees of pitch in musical sound developed. We have,

however, referred to the fact (Sec. 74) that in the more advanced mammals the several stages of mental progress are all passed through (though more rapidly in the life of the individual itself than in the lower forms), and it is this fact that enables even young children not only to imitate accurately sounds heard, but to *label mentally* their relations one to another.

It may be well here to notice that this power of mentally labelling (already insisted on in the sections dealing with the teaching of time) must not be confused with the power of Imitation —a much lower faculty—from which it is entirely distinct. Reliance on the Imitative instinct may occasionally serve a temporary purpose, as when one "hammers the notes" into a theatrical chorus or half-trained choral society; this, however, is not educating, it is "nigger-driving." In certain morbid states of the brain this tendency to imitate is especially noticeable. Birds often imitate the sounds of other birds; the imitative capacity of the parrot is well known, and house-sparrows have been taught the song of the linnet. Teachers of music who rely on the use of mere imitation as a system for training students, without compelling sufficient exercise of the intellectual powers, may indeed produce a rough resemblance to the genuine article, but it will not bear any detailed criticism (Sec. 49).

76. Aural training as to pitch at first resolves itself simply into distinguishing a high sound from a low sound.

(Again here we must be careful in dealing with young students! "high" and "low" are at first very puzzling expressions to children, who associate such words with something visible and not at all with something audible.)

Should the ear's discriminatory power be very weak, it may be helped at this early stage by the eye, using the keyboard as a guide, the relative positions of high and low sounds being shown; but the character of the mental effect is the important and essential point to be insisted on as early as possible. Later, the distinguishing *by ear* alone, without reference to the eye, of a high sound from a lower, or a low sound from a higher, forms the first step in Aural Training for perception of pitch.

77. It may be convenient here to sketch out the approximate order in which perceptions as to relative pitch usually present themselves, leaving out of account those varieties of tone-colouring or tone-power—a discrimination of which is just as necessary a part of a musician's training as a sense of time and pitch.

(*a*) Height or depth of single sounds in succession (merely comparative, higher or lower).

(*b*) Relation of two sounds in more detail, leading to the recognition of the interval of the octave, heard together or separately.

(*c*) Concord (the recognition of two sounds which are pleasant—heard together or in succession).

(*d*) Discord (the recognition of two sounds which are unpleasant—heard together or separately).

(*e*) The major scale (single notes in succession produced by adding intermediate sounds to the major triad).

(*f*) The minor scales (produced by adding intermediate sounds to the minor triad).

(*g*) The chromatic scale and other single notes in succession in any order in major and minor scales, and intervals of any distance contained therein.

(*h*) The major triad.

(*i*) The minor triad.

(*j*) The augmented triad.

(*k*) The diminished triad.

(*l*) Simple cadences in root position (successions of two chords only).

(*m*) Inversions of concords (the $\frac{6}{3}$ and $\frac{6}{4}$ of major triads—as isolated chords).

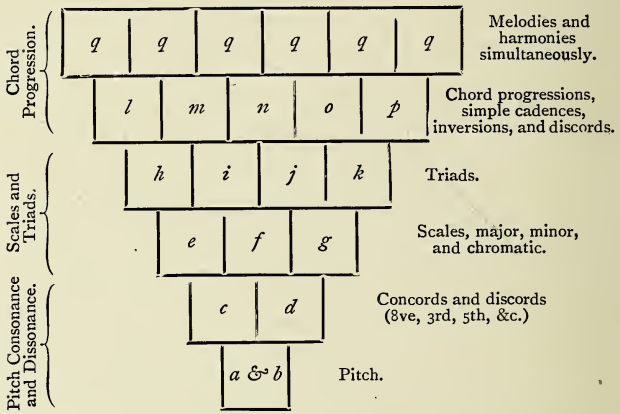
(*n*) Inversions of concords (the $\frac{6}{3}$ and $\frac{6}{4}$ of minor triads—as isolated chords).

(*o*) Simple discords and their resolutions (dominant and secondary sevenths, inversions, &c., and suspensions, one note only being discordant).

(*p*) Compound discords and their resolutions (diminished sevenths, augmented sixths, &c., one or more notes being discordant).

(*q*) Melody and harmony simultaneously (the union of melodies having passing notes and appoggiaturas, gradually more complex in character over harmonies more and more varied, and an ear for recognition of part progression).

Here is a diagram approximately illustrating the evolutionary process ; the letters refer to the above divisions :



78. We will now discuss each of the above stages of development in further detail in the order above mentioned.

(*a & b*) *Pitch.*—In the case of fairly developed intellects—*i.e.* not of very young children—it is often useful to explain the physical reasons for the various differences in pitch possessed by the same

or different vibrating bodies. Persons with dull perceptions of pitch often sensibly improve after knowing that the tightening of a string raises, and the slackening of a string lowers the sound (perhaps illustrating by a reference to violin or piano tuning), or that the shortening or lengthening of a vibrating air-column does the same, giving practical experiments—a course advisable when possible, as it always increases interest and is, in the true sense of the word, impressive. In the case of children, discrimination-power is developed through the comparison of various familiar sounds: the whistle of a steam-engine contrasted with another and with other deeper and higher sounds, such as thunder, the squeak of a gnat or mouse, &c.

The "ear for music" in its degree of completeness is entirely dependent on the frequency with which these and similar phenomena are observed and felt in the early stages of student-life: it is partly the business of a teacher somehow or another to provide these experiences (Sec. 33).

(*b*) *Relation of sounds in more detail.*—It is a sound educational maxim that we should proceed from the simple to the complex, and accordingly, soon after some discrimination as to pitch is established we shall naturally endeavour to establish a sense of the relation one sound has to

another in regard to distance apart—or interval. The easiest interval to commence with is, of course, the octave. Starting in the middle of the piano, striking one key rather loudly with the left hand, and its octave above softly with the right hand, the student is asked to say whether there are two sounds or one. He will probably answer "One" if the piano is in decent tune and the upper octave is not too loud. If it is pointed out that two keys are struck, though they sound almost like one, interest, attention, and expectancy are aroused, when the phenomenon may be more or less explained at the discretion of the teacher. Then adding the octave soon after the striking of the lower note, the student should be encouraged to indicate the precise moment when this takes place; and this should be continued until the addition of the octave even quite *pp* is instantly recognised. The addition of the octave below will be found much easier to the majority of students, though at first there may be some uncertainty as to whether the note added is an exact octave, or slightly more or less. Recognition of sounds an octave apart at various pitches, or sounds two and three octaves apart, will follow as a natural course, though it is not to be implied that these later acquirements must be possessed in their entirety before the next step in Aural Training is to be taken in

hand. With each advance in discriminatory ability in the separate divisions into which Aural Training may be divided as a whole comes improved perception as to detail in each; the order of progression being approximately the same as that illustrated in Sec. 26, where, though the reference is more immediately made to mental development as a whole, the diagram may also be taken to indicate the mental evolution of a faculty into a specialism.

(*c*, *d*) *Concord and Discord.*—In addition to the octave (Sec. 73), we are usually told that the consonances consist of the intervals comprising the major and minor triad, the perfect fifth and the major and minor sixth; while the dissonances are seconds, fourths, and sevenths of any kind, and all augmented and diminished intervals. The augmented second—a dissonant combination—is, however, identical on the pianoforte with the minor third—a consonant one; and the major sixth—a concordant interval—is similarly identical with the diminished seventh—a discordant one. It is therefore clear that in some way or another such a classification must be imperfect or incomplete, and should not be used without explanation for young students, who, discovering that precisely the same sounds are sometimes supposed to be concordant and at other times discordant, not

only get puzzled, but become disinclined to further investigation.

Concord or discord implies, therefore, in the fullest sense something more than mere pleasantness or unpleasantness.

Exactly expressed, these words represent finality or completeness, or unfinality or incompleteness.

In Sec. 73 it was pointed out that our sense of beauty is acquired and not inherent; so further may it be said that this sense of finality or unfinality in combinations or successions of musical sounds is likewise progressive, and the result of education and environment. Sounds once considered to be concords are now regarded as discords. Some combinations now considered almost the most harmonious we have—such as the major third—were once looked upon as dissonant; whilst the augmented fourth—an interval spoken of by the ancients as "Tritonus, diabolus in musicâ"—not only forms almost the foundation of our modern harmonic system, but is used melodically as a commonplace of piquant expression.

Excepting in the cases where the "musical ear" has been inherited or previously acquired, the teacher who designs to train a student to a perception of dissonance or consonance will frequently have to form a standard for him when

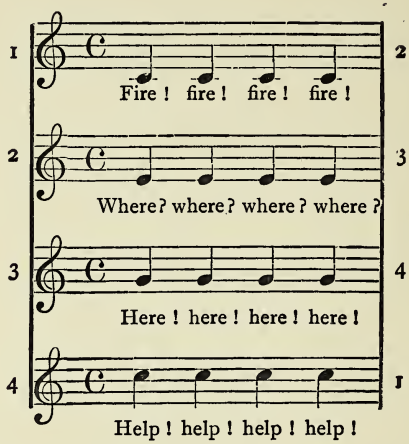
commencing. The pupil will perhaps have to be *told* which are consonant and which are dissonant sounds at first; the teacher using only the extremest discords (in two parts) and smoothest consonances, and, proceeding gradually from the recognition of concord as opposed to discord, should employ the various kinds of each in an ordered succession until adequate and approximate discrimination is attained.

It will be well also for the student *to endeavour* to express on paper the sounds heard; and he will be interested in his efforts to do so, but at this early stage it is not essential.

(*e*, *f*, *g*, *h*, *i*) *The Scales, Major, Minor and Chromatic, Major and Minor Triads.*—Proceeding always historically, we shall find that as a broad sense of concord and discord leads naturally and easily to a recognition of the major triad, so is the perception of the intervals in succession and in combination of the major triad a necessary preliminary to the recognition of the major scale.

Bearing in mind that it is now quite time that systematic attempts be made to express in writing the pitch of sounds heard, and to manifest them in sound by singing or humming them, such an example as the following, sung either as a solo or in the form of a round, will often be found

helpful in acquiring perception of the major triad:



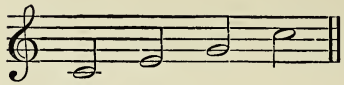
The tonic sol-fa system lays great stress upon the varied characters of each of the notes of the common chord, and of the scales, considered in connection with the keynote, and undoubtedly it is of great advantage in the early stages of aural development if these are pointed out by the teacher and realised by the student.

As the other notes of the major scale are either a note above or below the sounds forming the major triad, recognition of these additional sounds, "proceeding always from the known to the unknown," is not usually a difficult matter. The construction of the major scale is to be explained, but it is not to be imagined that this will be

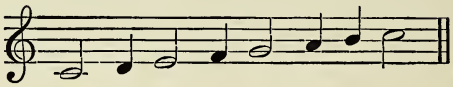
greatly profitable if continual reference be not made to the mental effect of the several sounds.

The minor scales will be treated similarly, and due care be taken to differentiate between the different effects of the various forms. The student should be encouraged to name successive sounds played in any order, and to name and write out major and minor triads dictated or played over. The chromatic scale, of which, as regards sound, there can be in the very nature of things only one kind, is easily recognisable from its resemblance, if given rapidly, to the "soughing of the wind"; if given slowly, the semitonic progression is obvious enough. It is, of course, for various reasons, a much more difficult scale to execute vocally than either of the others; but if it is regarded as a filling up or completing of the wider intervals of the major scale, which forms the normal outline to be kept steadily in mind, it becomes easy, especially if the chromatics be introduced by degrees—again proceeding "from the known to the unknown." The order in which these may be introduced is shown below—bearing in mind that, although the unbroken chromatic scale used melodically is in itself in no key, yet that the tonality is always defined by the accompanying harmony, and that the chromatic element itself is an evolution from the diatonic.

As



becomes through the evolutionary process



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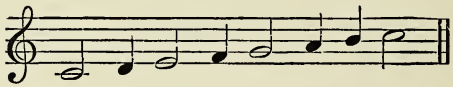
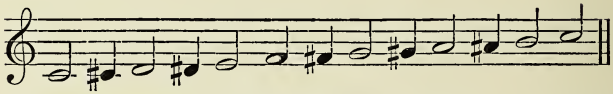
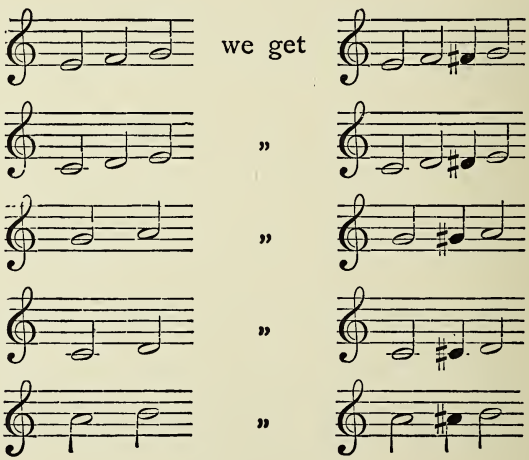


becomes



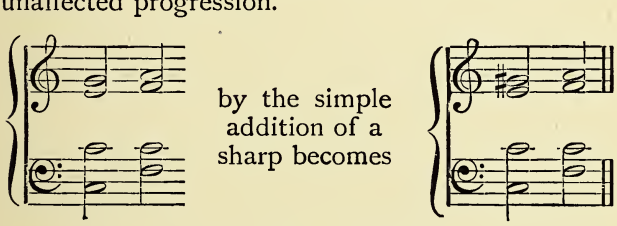
the chromatics themselves evolving in this order:



The descending chromatic scale is, similarly, to be regarded as evolving from simple diatonic forms.

(*j*, *k*) *The Augmented and Diminished Triad.*—These two dissonant non-final combinations of sounds are so distinct in character that they are readily differentiated. Further, the diminished triad is so rarely used in its uninverted form (harsh and rough), that this very rarity makes the chord noticeable.

The augmented triad is especially marked in its effect, not only by the lurid character of the tone combination, but also by its passionate yearning for resolution. The simple, natural, and unaffected progression.



the effect of the progression being wonderfully altered.

The extraordinary fascination this chord has for some composers is well known. Gounod (who has perhaps used it more than any other composer) has in "The Redemption" employed eight different augmented triads in succession, each chord occupying an entire bar.

(*l*, *m*, *n*, *o*, *p*, *q*) *Chord Progression.*—The germ of chord progression lies in simple cadences—the

perfect, imperfect, plagal, and interrupted. With their various inversions and modifications they cover a very wide field, and embrace nearly all the possible forms of harmonic progression.

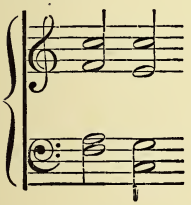
Most simple melodies are capable of being accompanied by their unsophisticated aid ; they form, indeed, the stock-in-trade of the professional "vamper," the raw material of the nigger-minstrel song and the revival hymn ; but used by a master in connection with bold and striking rhythms they possess a virile dignity, power, and majesty absolutely irresistible.

Handel's "Hallelujah" ("Messiah") is a remarkable case in point, the harmonies being almost exclusively one or other of the forms of progression from tonic to dominant and *vice versâ*—tonic to sub-dominant and *vice versâ*, &c.

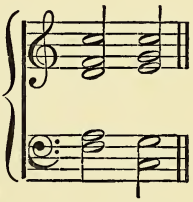
The power to recognise these progressions and express them in notation is now so far regarded as an essential part of a musician's education that candidates are required by some examining bodies to "satisfy the examiners" on these points. Such progressions as are implied by the terms "perfect cadence" and "imperfect cadence" (in both major and minor keys), "plagal cadence" (in major and minor keys) express idioms often perfectly familiar to many who may be quite unable to "attach labels" to them. With care and persever-

ance and close analysis there is no difficulty, however, in associating the name with the thing when the "thing" is already perfectly familiar. The perfect cadence, *e.g.*, may be compared to the full stop or period (.), the imperfect to the comma (,), the plagal (or church) cadence may be associated with the "Amen" so familiar to churchgoers, and so on.

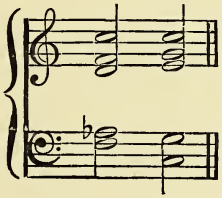
The principles of evolution applied to the cadential forms supply us with some of our most characteristic modern progressions. The plagal cadence



becomes by the mere addition of one note the "added sixth."



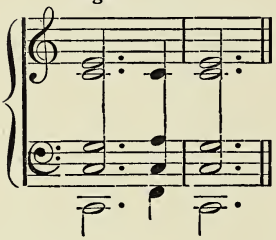
By the addition of a flat to the third from the bass we get a highly complex chord and resolution:



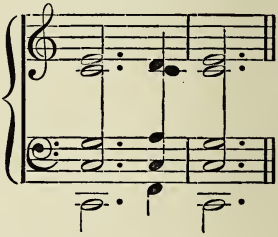
This "stretching" process, by which composers are continually evolving that which is apparently

new from the latent potentialities of the old, sufficiently accounts for the following progression, derived from the simple plagal cadence, but strikingly original and novel at the time it was composed (the evolutionary outline is given that the progressions may be compared) :

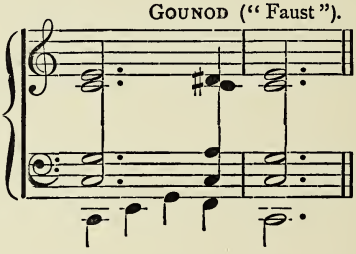
Plagal cadence.



Added sixth.



GOUNOD ("Faust").

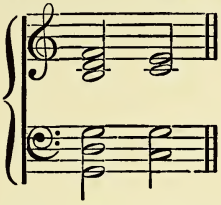


It is unnecessary to follow the subject further than to point out that if all the possibilities of the various forms of cadences, in their inversions and progressions, including that of reversal of the order of the two chords forming the normal cadence, are examined, our more modern progressions seem mere variants of them.

One example—that of the interrupted cadence, in which the bass moves one degree up or down for the second chord—must suffice to illustrate the principle :

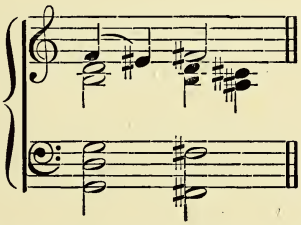
Perfect cadence with dominant seventh.

Normal Progression :



Dominant chord with seventh, followed by chord constructed on a bass note moving by step of second, forming interrupted cadence—the seventh being expressed as an augmented sixth for expedience :

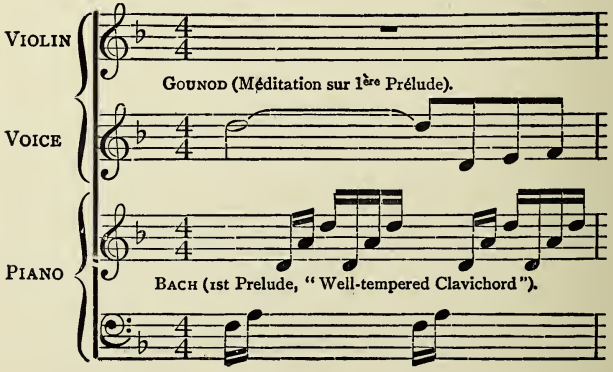
Interrupted Progression :

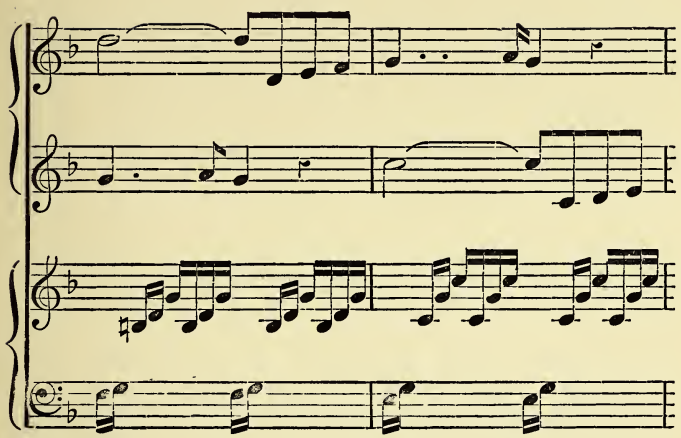


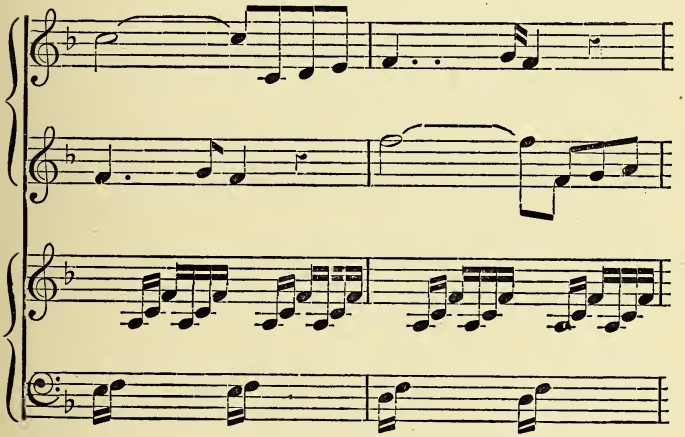
These kaleidoscopic changes, the essential and distinguishing features of modern harmonic methods, are of course the result of the adoption of the system of "equal temperament," which renders modulation into all keys an easy process through the media of equivocal or "doubtful" harmonies, common to more keys than one. In every sense, therefore, may we regard John Sebastian Bach as the "Father of modern harmony," not only because he showed the possibilities of equal temperament in his compositions, but because these compositions largely led to its practically universal adoption as a sheer necessity for their interpretation.

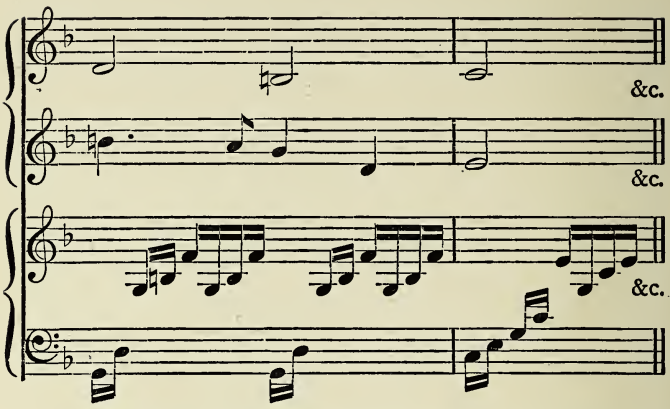
Melody and Harmony simultaneously.—Every earnest student should aspire, as a minimum of acquirement, to a mental recognition and ability to express in writing, if dictated bar by bar, any simple lyrical melody with the harmony and figuration of the accompaniment. Each addition to the contrapuntal or part writing element creates, no doubt, greatly increased difficulty; but a well-trained and well-equipped musician should be able to trace, in even an apparently complex score, at least the broad harmonic structure on which the polyphony is woven.

That the process is an evolutionary one may be easily recognised by the following illustration founded on a simple arpeggio—regarding, firstly, the piano part alone; then with the addition of the voice; and thirdly, with the addition of the upper line:

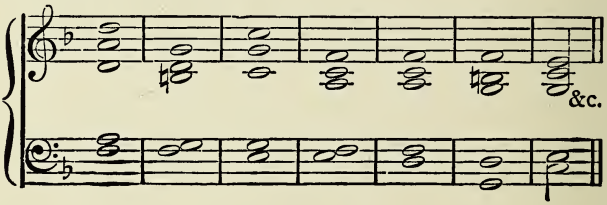








Though the student may find it not easy to identify all these combinations at once, yet, if the previous steps have been carefully gone through, he will have little difficulty in evolving them from the simple background :



CHAPTER IX.

PHRASING AND RHYTHM.

79. ROUSSEAU ("Dictionnaire de Musique") says: "The singer who feels what he sings and duly marks out the phrases and accents, is a man of taste. But he who can only give the values and intervals of the notes without the sense of the phrases, however accurate he may be, is a mere machine."

Just as a feeling for time is based on a perception of accent by stress, and is instinctive and inherent, so is the art of phrasing and perception of rhythm dependent not only on a feeling for pulsation, but also on intelligence or intellectuality.

A good reader, reciter, or speaker of language marks off his periods, clauses, sub-clauses, &c., by appropriate accents and suitable punctuations—in other words, by degrees of prominence in the one case, and degrees of silence between sounds on the other. The degrees of prominence and of silence

though they may be approximately indicated by punctuation-marks (comma, semicolon, &c.), are incapable of being *exactly* expressed, and for this reason the intellectuality of a speaker or singer is more surely evinced in his capacity for disintegrating composite ideas into their several parts than by any mere beauty or power of tone.

The great difference between phrasing in ordinary speaking and as regarded in music lies in the fact that whilst in the former both accents and quantity are dependent on the will of the speaker, in the latter they are largely decided by the composer. One is largely *free*, the other largely *fixed*. If we take such a sentence as "We shall ride to town to-day," we shall find that by varying the emphasis on each word in succession we can give an entirely different sense to the sentence with each change.

Not only may the pitch of the different words vary, but also that of the separate syllables, whilst the fact that no one pitch need necessarily be preserved for any definite time, also widely differentiates prose from music. If we compare poetry, however, with music, we shall discover that there is a closer analogy between them than there is between prose and music, as they have at least two elements in common, the regular recurrence of accent, and a parallelism in the groupings

of accents—non-existing in the case of prose. In many instances, too, the delivery of poetry seems to suggest some approach to musical tone by less variety of inflection. Here are differences briefly set out:

Prose.

Pitch variable; no regular and uniform recurrence of accents and groupings of accents, but separable into clauses, sub-clauses, and other divisions.

Poetry.

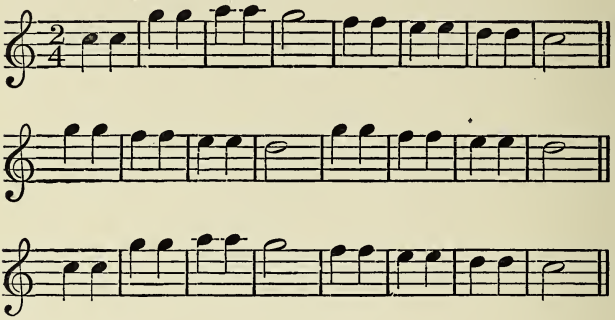
Regular recurrence of accents; responsorial and parallel rhymings in sound at end of sections; some approach to uniformity of pitch in delivery.

Music.

Regular recurrence of accents; responsorial and parallel rhythms (which differ from rhymes in that the responsive element is in regard to the *groupings of sounds* and the *length* of the sections, and not to the sound-echo of ordinary poetry) and relation of one sound to another in regard to pitch.

80. From a consideration of these points it is evident that phrasing and rhythm applied to music are in themselves a development of aural perceptions in certain ways not hitherto considered, the chief points involved being the *comparative*

lengths of the sections and the *position of the cadences.* Here is a simple nursery air:

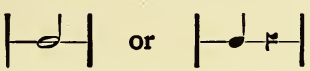


It is clear, when we listen to this, that the melody has a kind of close or termination perceptible easily to the ear, at regular intervals throughout; and this view is confirmed on reference to the written signs, where we find not only that the music groups itself into three main divisions, each eight bars long, but that each of these main divisions is compounded of two lesser divisions, each four bars long terminating with a long note, forming one or other of the common forms of cadence (Sec. 78).

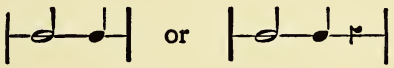
The teacher and student were warned in Sec. 52 against substituting a comparison of sign for the recognition of pulsation in studying time, and in Sec. 78 against substituting analysis of scale formation for the recognition of interval. It is now necessary to warn equally against the mechanical process of enumerating bars, instead of listening for cadences; though sometimes the arithmetical test in case of doubt may be of service as an auxiliary.

81. We may now consider how, in addition to terminating a cadence, the final note of a phrase may appear. It occurs in three ways :

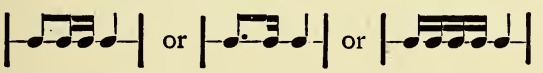
(1) On a long note, or a note followed by a rest at the beginning of the last bar :



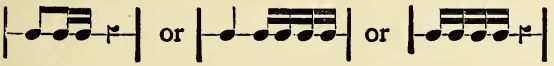
(2) On a note falling on an unaccented beat preceded by a note as long or longer than the last (the so-called " feminine " termination) :



(3) On a note falling on the unaccented beat preceded by several notes, each shorter than the last (really constituting a miniature bar of equal duration with the last note):



None of the following outlines could form the pauses or rests, already referred to, which periodically occur in the rhymed periods—as they do not fulfil above conditions :



82. If the attention be specially and continually directed, therefore, from the very commencement of

study—even before the pupil is capable of executing pieces—to the establishment of the perception of the two points named, the foundation of the whole art of phrasing is laid. These may be briefly summarised as follows:

(1) Rhythmic outline (responsorial sections of two and two, three and three, or four and four bars).

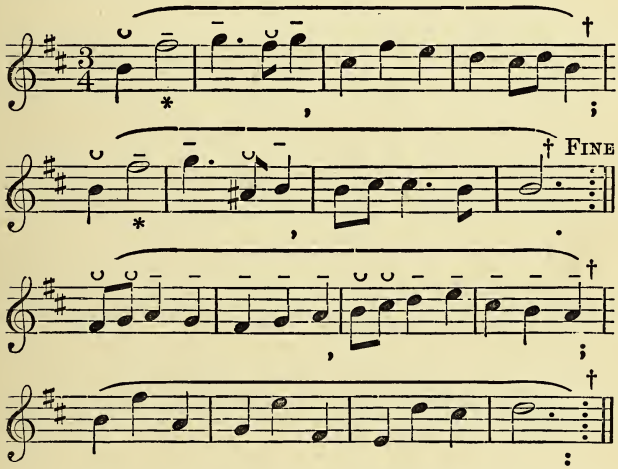
(2) A pause or rest palpable to the ear at the end of every eight, twelve, or sixteen bars, forming some kind of cadence, the final note occurring as above.

83. The various divisions of a melody are separated from each other in actual performance by a slight break in the continuity of the tone: in short, the otherwise universally implied *legato* is interrupted. The length of this silence is variable according to the degree of continuity desired. The silence required is usually obtained by shortening the duration of the last note of the division, and much intelligence is demanded from executants to determine the length of the silences which are most fitting and appropriate to their surroundings. Speaking broadly, the "breaks" will be longer in the larger sections than in the smaller ones.

The divisions corresponding to the full stop, semicolon, colon, comma, &c., of prose, are called by M. Lussy, section, hemistich, cæsura, and period;

but students and teachers are warned that these and other words, such as phrase, section, clause, sub-phrase, &c., are not used by all writers, nor are they employed in the same sense by different writers. Shakespeare asks "What is in a name?" and the answer is assuredly "Nothing"—if one is aware that the same thing often has different names, and one knows what they are!

Mattheson in his "Kern Melodischer Wissenschaft," published at Hamburg, 1737, gives the following interesting example of musical punctuation and its analysis:



"The whole consists of a paragraph of sixteen bars, producing, with the prescribed repetitions, forty-eight. The paragraph is composed of two

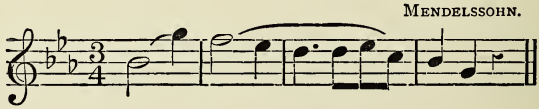
periods of phrases marked by a full stop, and a colon; and these are subdivided into half-phrases marked by a semicolon, and into quarters indicated by commas. The asterisk in the first and fifth bars marks the threefold emphasis (expressive accent).

"The geometrical connection (the rhythms) is shown by †, and the long and short feet by — and ∪."

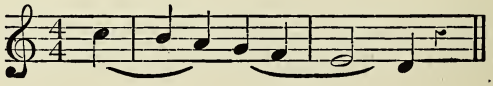
This early use of the term "expressive accent" — (see further, Sec. 99) is worthy of notice.

84. It is a first principle in the art of phrasing that notes belonging to the same division must not be separated by a break in the continuity of the melodic succession. Such divisions are shown by the sign known as a slur, which is taken to imply that the first note contained therein has some kind of an accent; that the notes it includes are not to be separated; and that the final note is generally to be shortened and "lightened." Such effects as are given here would be intolerable

MENDELSSOHN.

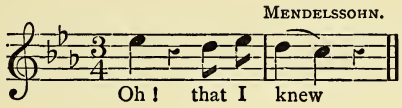


or—

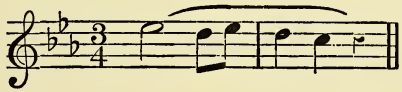


where the "breaks" are not in accordance with the principles laid down in Sec. 81, 82.

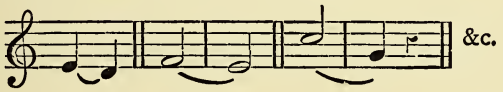
The only instances in which sounds belonging to the same melodic division may be "broken" are such exceptional effects as are analogous to the note of exclamation (!) used in prose, found usually at the beginning of a sentence, as this:



where the section obviously is:



85. The simplest form of note-blending or phrasing is that of two notes, thus:



Three conditions are involved in the production of the correct effect of such passages:

(1) The first note must be *louder* than the other.

(2) The first must be *longer* than the other. Should the written values of both notes be alike, the duration of the second must be somewhat shortened.

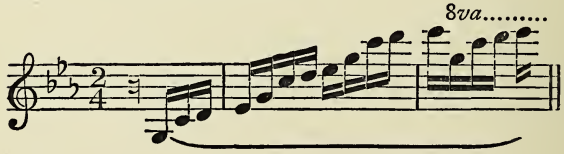
(3) There must be no break or silence between them.

These rules hold good whether the first of the

two notes occur on the strong or weak parts of the bar.

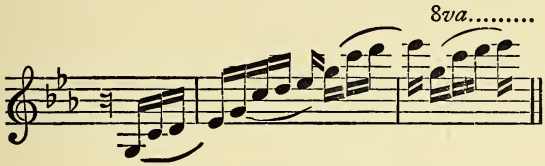
The relation between the power and duration of successive sounds (or dynamics and agogics, as named by some German pedagogues) is a matter of keenness of ear for balance and proportion, as well as perception as to sound-termination. The technique often implies—on the pianoforte the *Abzug* (or withdrawing stroke), or one movement of the bow on stringed instruments, or one emission of the breath in the case of the voice or wind instrument.

86. Speaking generally, all passages over which composers write a slur should also be executed without break of continuity—in the case of pianoforte music with one movement of the wrist; but practically there are many exceptions to the rule. Through carelessness and conventionality, slurs are often indicated where it is impossible to execute the passages without some degree of break. This is an instance:



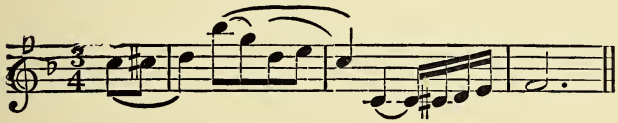
In such a case the slur may be taken as a mere legato mark. It, however, should be noticed

that whenever a passage requires several movements of the wrist, this fact in itself shows that it really consists of several sections. The above passage, therefore, could be phrased as follows:



the last note of each slur being slightly shortened if in slow time.

87. Even if not expressed by any sign, it is often effective in rather slow time to "make a section" where there is a rather wide leap in the melody, especially if it be to an unaccented beat:



where the last note of the slur is shortened, giving a certain prominence to the succeeding note, without its force being necessarily increased.

It should be noted that this *prominence* by isolation, produced when any sound is approached by a wide leap, or after a silence, is the especial feature of that subtle form of accent sometimes known as rhythmical, to distinguish it from metrical, accent (principally produced by stress); sometimes, in order to get unusual prominence, we may use them simultaneously.

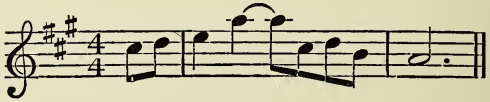
If the music be in quick time, any attempt to

"make sections" in these cases would be of bad effect, and must be avoided. Sections are, however, generally to be made after the first long note succeeding a group of "small" notes.

88. The *first* note of every section will usually be *accented* in either its metrical or rhythmical form.

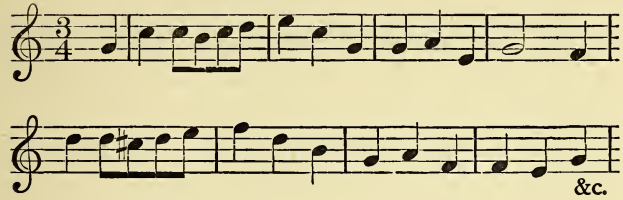
The *last* note will usually be an *unaccented* one unless an "overlap" takes place: which happens when the last note of one section forms also the first of another. Although it is true in theory that the first note of every bar also is accented, this rule breaks down frequently in practice, and rightly so—for, in spite of the importance of metrical accent, it is subordinate to rhythmical accent, which in turn gives place to the expressive accent — treated later (see Sec. 99).

Nothing could be in worse taste, for instance, than strong accents on the first of each complete bar in the following instance:



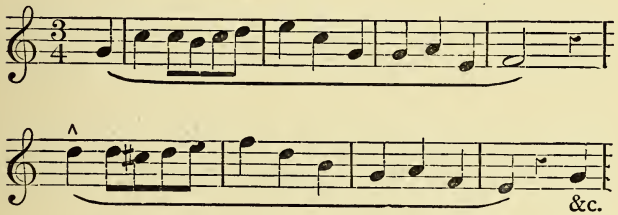
89. Occasionally there are passages to be found where the principles of parallelism and response, spoken of in Sec. 82, do not seem to furnish a sufficient clue as to the note terminating the

section. The following melody (quoted by M. Lussy as a case in point) may illustrate the difficulty:



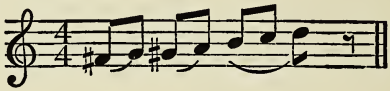
Two questions here arise: Are the F in bar four and the G in bar eight the beginnings or the ends of the sections? And, accordingly, do they require rhythmical accent or not?

A reference to the ear and to the harmony (the two judges in the final court of appeal) will show us that these two notes are a species of appoggiatura, the unornamented outline being as follows:

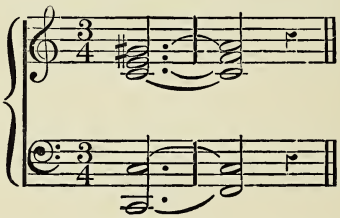


It will be noticed that the first note of the second section is accented, whilst the first note of the opening section is unaccented. This occasionally happens.

90. Breaks will usually be necessary where chromatic semitones are succeeded by the diatonic note next above it :



and also after the resolutions of discords :



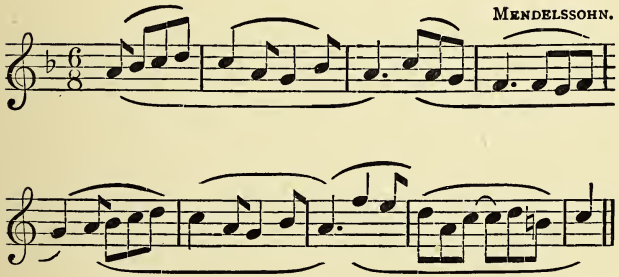
This is another instance where, as the resolution of a discord is always weakened in comparison with the force of its percussion, the first note in the bar will not only receive no accent, but be relatively *piano.*

91. It must be clearly impressed on the student's mind that, whilst precision as to accentuation is more and more necessary in proportion as the rapidity of the passage increases, yet the kind of accent required then is principally that known as metrical. The rhythmical accent can only be partially applied in such instances.

92. Reference has already been made (Sec. 86) to the use composers occasionally make of the slur

to imply *legato* without intending any break in the continuity of the melody. It is most important that the student should be able to distinguish between the slur used as a legato mark only, and as a phrasing mark, just as he has presumably been taught also to distinguish the slur from the tie.

In the following extract the composer has used the slurs shown above the stave as *legato* marks ; yet they are not unfrequently rendered as phrasing marks, with the most absurd result :



The correct phrasings are shown by the slurs *beneath* the stave.

The slur when used over three or more notes in succession does not necessarily imply that the last one is shortened ; and a consideration of the position of the cadences, and the parallelisms of the sections (Sec. 80), as well as the effect on the ear, should suffice to prevent anyone from falling into such an error.

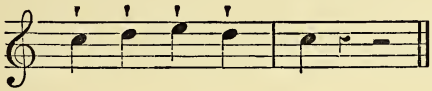
93. It may be pointed out that the execution of the legato—supposed to be universally implied unless the nature of the passage or the composer's expressed desires are not in contradiction—is more easily accomplished if the successive sounds are varied in power than if the tone be kept on a dead level: they then blend and apparently almost overlap in a degree which is specially useful to the pianist. The rendering of a true legato is, of course, much easier on some instruments than on others; but it is an indispensable equipment of every musician. The whole necessity for careful fingering is to ensure *legato*; and, if the ear were duly trained to perceive the bad effect produced by "broken up" progressions, more than half of the carelessness and indifference shown by the ordinary student would be removed.

The ideal *legato* (bound; German, *gebunden*) preserves the continuity of the first sound up to the very instant of the commencement of the second, and not one moment longer. Faults in two opposite directions are "overlapping" on the one hand, and "breaking," or silences between the notes, on the other.

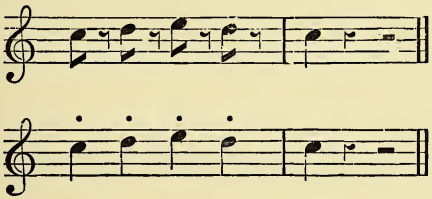
94. The effect of passages *staccato* (as already stated; see Sec. 69) differs much according to the length of intervals of silence between the several percussions. Indicated simply by the use of the

word *staccato* or the employment of dots or points above or below the notes, much depends on the general intelligence of the performer as to its result.

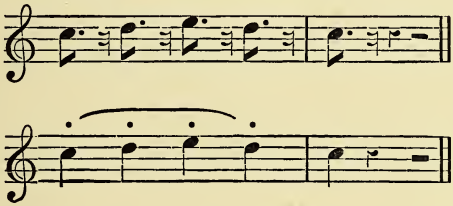
It is generally assumed that the several degrees of staccato proceed in the following order :



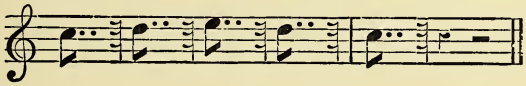
executed thus (approximately half-length) :



approximately three-quarter lengths :



approximately seven-eighths lengths : forming the effect known in pianoforte-playing as *Portamento* :



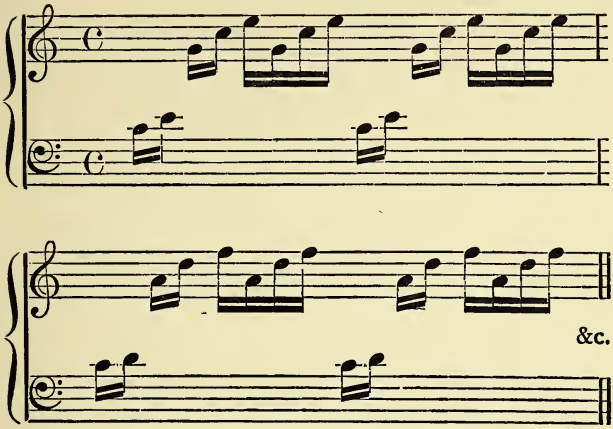
It must, however, be noted that the dot placed above or beneath the notes does not invariably imply *staccato*; it is sometimes used by Schumann and others to express *prominence*, the notes so marked being intended to stand out above the others in respect to tone.

But the chief element which affects the degree of silence between the notes is the *tempo*. In quick time, staccato notes are usually made as short as possible; with slower times, the break will be less and less marked, until in the *adagio* and *lento* the very short staccato is hardly ever used at all. It is important to notice, if staccato effects are desired in connection with notes of varying lengths, that the shortenings should be in proportion to their indicated values.

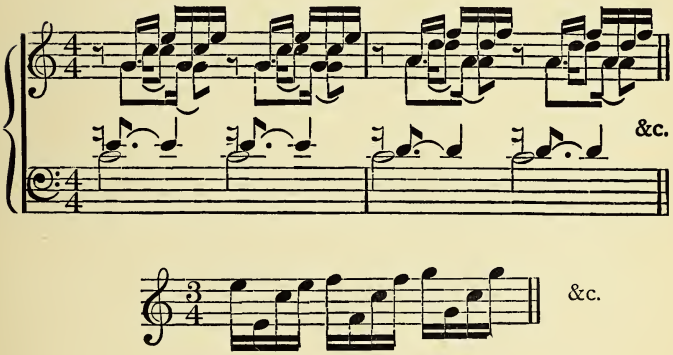
95. There is another deviation from the written values of the notes in a precisely opposite direction to that of the staccato, which is of some importance. This is the effect known as *legatissimo*, produced by prolonging the notes for more than their written value. It is most useful in the works of Bach, Handel, and other composers writing prior to the invention and general use of the sustaining pedal, as a certain thinness in the harmonic structure is largely removed. Hummel, in his "Pianoforte School," devotes considerable attention to the subject, and there seems little doubt that Beethoven contemplated its use in some of his Sonatas.

It can only be applied to passages founded on the same harmony—*i.e.* notes taken in arpeggio.

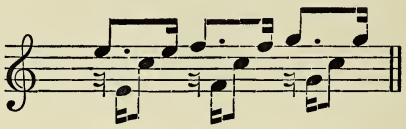
Here is a simple arpeggio:



With *legatissimo* it gives the effect of Bach's First Prelude ("Forty-eight Preludes and Fugues") as usually printed.



If played *legatissimo* would give the effect of Cramer's Study No. 5 :



The *legatissimo* is to be found in the works of Chopin, Schumann, and other modern writers, but they usually write out the effect in full as it is to be played, and do not leave it to the discretion of the performer, as did some of the older writers.

CHAPTER X.

MUSICAL EXPRESSION AND THE EMOTIONAL ELEMENT.

96. ASSUMING that the instinct for regular pulsation and intelligence in phrasing is possessed with sufficient volitional power to manifest in sound that which is more or less expressed vaguely by the notation, there yet remains to be considered the important element of feeling and emotion, which forms such an important part of the equipment of a musical performer.

97. There are many teachers, and others, who express the belief that it is impossible to impart feeling for expression if it is not innate—a proposition which is true enough if it refers to an analogous process to that of making "a silk purse out of a sow's ear." It is obvious that a cold, reserved temperament, shrinking from any manifestation of its own feelings, is not likely to be able to express the feelings of others when it habitually suppresses its own. This reticence as to the expression of feeling, so characteristic of Anglo-Saxons and some other mixed races, as

compared with the Latins and Celts, is often mistaken for absence of all emotion, though it may be possessed in more than ordinarily full measure.

Many persons, influenced by heredity and environment for a long period, are often found in a high degree responsive to a good teacher's influence.

Instances are not wanting of persons of intelligence, though reserved and reticent in temperament, ultimately achieving a high position in the artistic world. Many well-known and successful actors and actresses have had at first to be taught the technique of the art. At first, no doubt, the result is crude and awkward, if not ridiculous; but in degree as the actions are repeated with intelligence (Sec. 29), so do they in time so far become instinctive and automatic that the mind, set free from the physical domination of the body, is able to evolve from itself many developments previously impossible. The creation of a work of art of any kind involves at first an element of imitation and the following more or less of set rules, with the empirical *régime*, which gives place in due time to the independence of the artist.

Every good teacher of the dramatic art knows that, though in theory the emotion supposed to be felt should spontaneously carry with it its own

outward manifestation, yet in practice even those who may and do subsequently rise to great heights have at first to be shown how it may be expressed. There is a tendency with shallow thinkers without practical knowledge to inveigh against this, and to say that, if "expression" has to be taught, it is better and more natural to dispense with it, as it only tends to increase the numbers of the mediocrities who can always be made passable, if not great. These objectors overlook the fact that to express the emotions of others, of which you have perhaps had no actual experience, is quite a different thing from expressing your own; and that if the technique of expression could not be taught before the emotional instinct was itself awakened, many glorious artists would have perforce remained dumb for ever.

The young painter copies celebrated pictures; the budding *littérateur* studies the styles of various authors; youthful composers invariably reflect—sometimes consciously, sometimes unconsciously—the mannerisms and peculiarities of older writers.

The earlier works of Beethoven are almost undistinguishable from those of Mozart and Haydn; and, similarly, the first operas of Wagner closely resemble those of Meyerbeer or Weber.

It is not unlikely that some ignorance as to the existence of the psychological principle underlying

these facts has caused many teachers of music to abstain from any attempt to deduce rules for the performance of music with expression, and to apply them for the benefit of such students as especially need help.

98. Ignoring, then, for the time being, any reference to time and rhythm, we shall find that musical emotions are largely affected by considerations as to the relative degrees of *power* possessed by consecutive combinations, and the degree of rapidity with which they are passed through in comparison with the normal regular metronome pulsation (Dynamics and Agogics); in other words, emotionalism implies variation in tone-power and variation in length of pulsation.

The "music" produced by a mechanically driven instrument, such as a piano-organ, is stiff and unpoetic, because of the impossibility of expressing these variations; but if behind the technical accuracy possessed by these machines there were a human element which, absolutely under control in every respect, could equally well control the utterances of the machine, we should not be very far from having an ideal state of things. The recent advent of the mechanical Piano-players will indeed prove a blessing disguised, if it lead to more universal attention to those *minutiæ* which differentiate an artist from a machine.

Up to the time of the publication of the various works of M. Lussy, whose writings are far more numerous than those of any other author on the same subject, the only practical directions as to musical expression extant appear to be those

contained in Czerny's Great Pianoforte School (published about 1836), which are as follows:

"A *ritardando* or *rallentando* is used:

"(1) On the return of the principal subject.

"(2) When we separate a phrase from the melody.

"(3) On long notes strongly accented.

"(4) In the transition to a different time.

"(5) After a pause.

"(6) On the *diminuendo* of a quick, lively passage.

"(7) Where the ornamental notes cannot be played *a tempo giusto.*

"(8) In a well-marked *crescendo* serving as introduction or wind-up to an important passage.

"(9) In passages where the composer or the performer gives free play to his fancy.

"(10) When the composer marks the passage *espressivo.*

"(11) At the end of a shake or cadence."

99. These rules can hardly be considered as adequately dealing with the subject, the "expressive accent" and "nuance" being practically ignored. We may endeavour to supplement them, premising that what is known as "expressive" accent is a slight prolongation or broadening of a sound as compared with the value of the written symbol; and that "expressive" notes are those

foreign to the key, or unexpected, irregular, and exceptional in their surroundings, either in regard to their tonality or position rhythmically.

(*a*) Ascending passages usually imply *crescendo* and descending passages *diminuendo*, though often the reverse is effective; when the passage contains "exceptional" notes, the highest note in the phrase will be usually the loudest.

(*b*) All passages modulating to distant keys require great sonority, though it is not implied that this sonority must be preserved continually: it must constantly vary in degree; and in particular, if a modulation occur after a very energetic passage it should be taken *pp*.

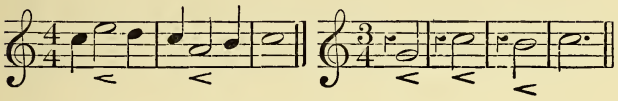
(*c*) If a group of low sounds suddenly appears after a passage of higher sounds they should be *pp*.

(*d*) A sudden *pp* on the highest note of an ascending crescendo is effective if it also is the last; short passages repeated an octave higher should be *pp*; short passages repeated an octave lower, on the contrary, should be *ff* as a rule.

(*e*) Cadences and terminations naturally tend to *rallentando*. In all cases when employed the rallentando is more effective if produced *gradually*, each successive note being *slightly* longer than the previous one.

(*f*) When syncopation is produced—*i.e.* when an unaccented note is prolonged into an accented

one, or a rest is introduced where an accented note would usually occur—the note prolonged, or the note after the rest receives a strong accent by stress :



(*g*) A long note following several shorter ones requires great force ; and where possible a crescendo while being sustained.

(*h*) Triplets occurring exceptionally, especially at the end of a phrase, often require vehement stress.

(*i*) Repeated or reiterated notes nearly always imply an increased amount of force for each repeated note (unless the passage is a mere *tremolo*).

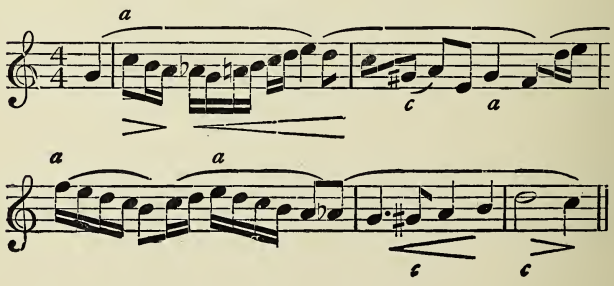
(*j*) Appoggiaturas, or auxiliary notes, whether written as small notes or in the ordinary way, especially require the expressive accent.

(*k*) All isolated or exceptional chromatic notes, or notes foreign to the major or minor scale in which the piece is written, require the expressive accent ; though short chromatic notes in a group forming a scale or arpeggio are not accented. All augmented and diminished intervals, if in long notes, also require the expressive accent.

(*l*) All discords, especially those modulating to distant keys, require not only great force but also often slight prolongation; the degree of force and amount of prolongation will be proportionate to the "exceptional" nature of the combination. The more unusual the chord, and the more remote the key, the greater is the need to impress them on the hearer; indeed, everything which is "exceptional" in itself requires exceptional accent.

100. The three kinds of accent—metrical, rhythmical, and expressive—therefore have their own functions and limitations. Though they may occasionally for special effects be used simultaneously, yet as a rule the metrical excludes the other two. The rhythmical often supersedes the metrical, whilst the expressive would be quite out of place in a piece in quick time, though one may sometimes succeed the other in rapid alternation.

Here is now a melody with phrase and expressive marks according to the above principles:



It will be observed that the metrical, rhythmical, and expressive accents are all demanded for the effective rendering of even this simple melody (*a* indicates metrical accent; *c* expressive accent; whilst the rhythmical accent is shown by the slurs).

It would be quite possible for anyone thoroughly acquainted with the general principles laid down in this chapter to add marks of expression to an unmarked piece, or to amplify those already given, in such a way that, if subsequently compared with a performance of the same piece by a competent artist, they would be found in practical agreement therewith. Nothing can be more conducive to the intellectual exercise of the emotional function than its frequent exercise in such directions.

It would be impracticable, in a work of this kind, fully to codify all the rules for the use of that most powerful element of musical emotionalism known as *Portamento.* Possible in its true sense only to voices, and a few instruments not possessing fixed intervals, the comparative rarity of its employment is one of the conditions for its real effectiveness. It is produced by rapidly passing through all the possible intermediary tones between two fixed sounds; it is often associated with the slur, or where it is specially desired to connect rather wide intervals. (As applied to the pianoforte, see Sec. 94.)

CHAPTER XI.

ON METHOD AND SYSTEM IN STUDY.

101. BE a teacher ever so thoughtful, painstaking, earnest, and erudite, if his influence extends no further than the duration of the lesson his exertions will be largely in vain.

If it be true, as it assuredly is, that the tree is known by its fruit, it is at least equally true that a "teacher" is "no teacher" who cannot interest the pupil not only during the lesson, but so far arouse enthusiasm and stimulate ambition as to ensure that the subject-matter of one lesson forms food for much mental digestion for the next one also. Particularly important is this in the case of the teacher of music, because any knowledge he imparts has to be manifested in action, implying technique and many more repetitions of the same movements than are possible in the relatively short music lesson. It therefore follows that a large part of a music-teacher's duty lies in so influencing the student that the essential "practising" is conscientiously and thoroughly done when his personal presence is withdrawn.

This, from its very nature, is a peculiarly difficult task.

102. The specific naming of work to be done from lesson to lesson is therefore almost an absolute necessity. It is less necessary, of course, in the case of young children who enjoy (?) the advantage of "supervised practice" (often very useless unless the supervisor is, in turn, supervised and advised !) ; but even then some definite system of dividing the time available is desirable. A good rule is to separate the whole, whatever its duration may be, into three equal divisions, corresponding roughly with the three divisions of Mind ; and to subdivide these again into ternary divisions, as the student's task increases in complexity with proportionately more time at his disposal.

For instance, a child who has half an hour daily available should divide it as follows:

Aural Perception (including dictation of time and tune)	10 min.
Notational Sight Reading (rhythms, interval and technique)	10 min.
Performance (easy duets and solos) ...	10 min.
	30 min.

The above assumes "supervised" practice by a sympathetic and trained monitor or junior teacher.

If this is not available, the teacher should prescribe such analogous exercises covering the same ground as are capable of being undertaken alone.

Half an hour is the maximum time that a young child ought to give to musical study at one sitting. Quite apart from the mental effort involved in thirty minutes' close application, the muscles of the side, back, as well as arms, get tired, especially when a music-stool is used instead of a music-chair.

103. As physical and psychical development advances, the time spent on musical study may correspondingly be increased. If at any time practising is reluctantly undertaken, it may of course arise from pure indolence—in which case a tactful teacher will invent a suitable stimulus, bearing in mind that young children are rarely, in health, lazy, and that apathy and dislike are easily set up by a forced attention to an uncongenial subject.

But very often it is more the result of physical or mental weariness, or a want of interest in the work; the latter state of things really reflecting more upon the teacher than upon the pupil.

The total time available may again be divided into three portions: one being occupied by the purely technical (or volitional), another by the intellectual (including aural training in its various

forms, sight reading, &c.), and another by the emotional (including the study of music pure and simple).

This division into thirds may, with advantage, be preserved, whether the practising time is longer or shorter than an hour, bearing in mind that progress results more from the degree of intelligence applied to the effort than to the time actually occupied. But although the length of time to be devoted to each kind of effort may well be divided into thirds, it is not to be implied, if the total time available for study be three hours, or four hours, or six hours, that it will be taken necessarily in one, two, or three sittings of a third each. In other words, it does not follow, because the subjects for study may be classified under three headings, each demanding a third of the available time, that this time is to be divided into three equal sittings.

Bearing in mind that the mind is fresher at the beginning of practice than towards the end, it is always best to arrange the work to be done in such an order that the subjects requiring the greatest concentration and effort be taken at the commencement.

The power of sustaining the interest is the indicator as to the length of the practice which is advisable.

A single hour is best divided into two parts—

one half-hour in the morning, and another in the evening. One and a-half hour also may be divided into halves. If three hours are available, two hours and one are better divisions than three sittings of an hour each. Four hours may with advantage be divided into sittings of two, one, and one hours, or one, two, and one, rather than one, one, and two.

It is more than doubtful if any practical benefit accrues from sitting at the keyboard for more than four hours a day, unless in exceptional instances.

There are, however, so many subjects which a professional student is called upon to cultivate, to say nothing of the necessity for preserving health by appropriate recreation in the proportion of one quarter of the total time spent in study, that a working day of eight or ten hours is soon occupied.

104. It is usually best to begin the practice with mechanical studies, commencing with those forms known as the small technique (the various forms of finger exercises in one position), and proceeding through the scales and various forms of arpeggios, all to be practised with very gradually increasing speed, though never so rapidly that control is lost, and with due attention to the dynamics and agogics.

This will be succeeded by the practice of *études*, for the second third (less aural work as below), and the remaining third (less aural work) should be given to the performance of actual music. Aural exercises, &c., should occupy one-third of each division.

The habit is to be strongly discouraged of flitting about from one subject to another, and from one exercise to another. Desultory practice, just merely "killing time," is one of the commonest faults of the ordinary music-student. Every single exercise—even the simplest—should be repeated until a *certain amount* of fatigue is experienced. Fatigue, though it is nature's danger-signal, is the only evidence we have that a function is being really exerted in adequate degree; and provided that we desist at its first manifestation, there is not any risk or harm. On the contrary, nature's first process, after a waste of tissue has been brought about by exertion, is immediately not only to repair the loss, *but to add a little more* to provide for future demands. This physiological fact explains why it is possible for weak muscles to gain gradually in strength; repetition of effort being as essential to physical development as to mental development, the latter, indeed, being only a variety of the former (see Sec. 12, 13).

105. The successful solving of any complex problem is always much facilitated if its separate items are disposed of one by one; no matter how complicated, great difficulties—great because they are *groups* of difficulties—yield in a surprising manner if resolved into their elements. This process of analysis is one that if used, as it should be, at every lesson by the teacher is quickly and readily assimilated by the student. Technical difficulties should be considered apart from mental difficulties, to their mutual exclusion if necessary. Time may be regarded as apart from fingering, fingering as apart from time; and so on. "Studies" should be broken up into fragments, phrases, portions of sections, &c., and practised in just that degree of steady even time which is not more rapid than the fingers can execute or the brain conceive—perhaps with each hand separately until not a note is missed, or a mental step omitted; the following and yet following portions being treated in the same way, and ultimately joined together.

106. A lesson should almost invariably conclude with a recapitulation of the principal points it has raised; and the student's appreciation of their nature and substance should be fully tested, when they will serve as special rallying-points for the next lesson.

The teacher will take care, having directed the attention to these as subjects for study in an especial degree, that he does not omit from any cause to hear them at the succeeding lesson. Otherwise a conscientious student who has worked, and a lazy one who has shirked, are equally demoralised. Many advantages in connection with these points are gained by the use of a suitable Practice Register.

If the student is unable to recollect more than a few of these points (assuming always that he is diligent and eager), there is evidently imperfect assimilation of the teacher's criticisms, owing either to the teacher's over-estimating the pupil's intelligence, or indifferent and incomplete technique on the part of the teacher as to manner, or failure to interest. In the former case fewer facts must be supplied; in the latter instance an advance in the culture and resource of the teacher is necessary.

As the cultivation of nerve-control forms an important part of the work of a teacher, it is generally wise to let a lesson commence with the performance of a piece or study in which the student's power of concentration and freedom from self-consciousness will be tested. This piece should be heard through, as a rule, without interruption or correction, though faulty passages should be "earmarked" for subsequent criticism. Some teachers so frighten and worry their pupils by too fidgeting corrections in the first few bars of a piece that they are quite unable to do themselves justice in the remainder, over which they may have,

nevertheless, spent considerable time and trouble. The result is disheartening to both student and teacher: to the former by damaging his *morale* and belief in himself, and to the latter in ways that speak for themselves.

107. Many of the highly detailed directions for practising given in some text-books seem to be based on the assumption that the student has practically no aural perceptions.

It is, however, to be conceded that many students have considerable difficulty in using their intellectual, perceptive, and volitional faculties simultaneously; and a very essential part of a teacher's work is the diagnosing of the mental development of the pupil in these three directions, and stimulating as required, due care being taken, if one faculty be weak, to avoid any tendency to shirk its exercise. A student, rather emotional, fairly intellectual, but weak volitionally, will often resort to any tactics rather than perform before strangers, or those imagined to be severe critics; or a self-possessed and self-contained individual with some intellectuality, but dormant musical perceptions, may be a terror to the neighbourhood; these cases must be considered as specially needing the imparting of a sense of balance and proportion.

The system of diagnosis here implied is the one always to be applied to the case of new pupils,

or any who have not already had the advantage of complete aural training.

108. Assuming that all the above conditions have been fulfilled, the teacher's care and thought may result in nought, if one more circumstance at least be not favourable. This is—real opportunity for quiet, steady practice. Most homes of the middle-class type, possessing only one piano, make the most of it by regarding it as a useful article of furniture and displaying it triumphantly in one of the two chief living-rooms of the house. So situated, the student is liable either to constant interruptions in one case, or, on the other hand, often to endure many petty discomforts. A teacher can often do much by a little tactful influence to secure definite times and seasons for uninterrupted practice when the piano is in the "dining-room," and fires and proper surroundings when it is enshrined in the "drawing-room." The ideal position, if a pianoforte is regarded as an indispensable evidence of respectability in a drawing-room, is to have a study or music-room, containing a second piano, especially dedicated to the use of students.

109. "Wrong notes result from wrong thoughts" (or none!) "Know and then do" (Sec. 1). If the brain is conscious of all that it has to do, and is acquainted with the mechanical means of doing it, only one further condition is needful for

its accomplishment—that of few or many repetitions of effort, till success is attained.

110. It must not be forgotten that the greatest of any possible stimulants to exertion is created and fostered in the student by a sense of *growing and improving power*; if this is duly initiated and duly progresses, it leads to such an increase of pleasure and delight in study, that any other stimulus is positively unnecessary.

CHAPTER XII.

TRAINING CHOIRS, CHORAL AND ORCHESTRAL SOCIETIES.

111. THE qualities necessary to make a good choirmaster or conductor being very numerous, it is not surprising that, from one cause or another, a large proportion of those persons who essay such duties only achieve a moderate success. So far as exposition extends, their requirements simply embrace on a somewhat larger scale the duties of a teacher; but to these must often be added that of a public demonstrator or performer.

112. Given the necessary musical qualifications (and they are many), what are the remaining indispensable attributes? They may be summed up as administrative ability, constructive ability and capacity for detail, social and temperamental adaptability, and tact. A musical commander should be a master of strategy and tactics; he should possess a mind broad enough to embrace the widest generalities and yet capable of attending to the smallest details (and it is remarkable how these two qualities have a tendency to exclude

each other!); he should possess an iron will and the keenest persistence—appropriately and becomingly accompanied with the *suaviter in modo*; and, lastly, he should have such command over technique that he is able to influence his forces just as he desires—to inspire them with confidence in himself and his generalship, and to win their loyalty and sympathy.

113. Most of these qualities are essentially acquired as the result of much social intercourse with varying types of humanity; others are gained by actual experience in a narrower groove. It is practically impossible for a recluse—scholar or *savant* though he be!—to be an effective platform speaker; and, in the same way, a musician whose chief work is in his study cannot be expected to shine as a man of action. Similarly, a musician who has "not been through the mill," or, in other words, has not himself in some capacity or another served under authority as a vocal or instrumental performer, is never likely to be a fit and proper person to control others. Here, as elsewhere, the *really good* servants make the best masters.

114. It is beyond the scope of this work to enter more fully into the consideration of such points as are outlined above; those who are in need of special suggestions in regard to administration, management, and organisation, and other details will find

much interesting matter in Mr. L. C. Venables' book, "The Choral Society" (Curwen), Dr. A. M. Richardson's "Church Music" (Longmans), Sir G. C. Martin's "Choir Boy Training," and the Rev. J. Troutbeck's "Church Choir Training" (both published by Novello); whilst the section on "The Orchestral Conductor," to be found at the end of the great work by Berlioz on "Instrumentation" (published by Novello), though first published more than fifty years ago, still contains much that all present-day conductors apparently do not know! The author lived, indeed, so much in advance of his time that it is only quite recently that many of his suggestions and ideas have been at all adequately carried out in even the best orchestras. Wagner's "Ueber das Dirigiren" (of which an English translation is to be had) may be also read with profit.

We therefore pass on to a consideration of those points not so immediately dealt with in any of the works above mentioned.

115. The choirmaster or conductor whose general intellectual, perceptive, and volitional faculties are thoroughly and equally developed, whose aural perceptions are acute as to time and tune, whose ideas as to dynamics and agogics are definite, and who can read his score with his eyes and hear it at the same time with his mental ear, has only to

unite with these qualities adequate interpretative skill (technique) to fulfil at any rate one side of the essential features required.

116. There are two different conditions involved in the begetting of that confidence in one's self which more or less affects interpretative success, and these are absolute ignorance on the one hand, and fullest knowledge on the other. A perfect tyro, "rushing in where angels fear to tread," and regarding the work of a conductor as being little more than that of a starter of a machine which subsequently works automatically, will often at first have little hesitation in undertaking that which he is utterly unable to do.

Between this and that of fullest knowledge there are many degrees; ignorance may lead to "doubt," doubt should lead to further knowledge, further knowledge to further efficiency, until the happy stage is reached of *consciousness of power* as a result of *fullest knowledge*. The commonest of ignorances is the ignorance of ignorance, and it behoves the young idea that he considers well and prepares thoroughly before he attempts a task which may bring himself into contempt and the art into disrepute.

117. Tradition, fashion, and especially, perhaps, the *ipse dixit* of Berlioz, demand that the conductor shall use a full orchestral score when giving

a concert. There are many occasions, however, when young conductors hamper their freedom and control by so doing; and they would be acting more wisely if they were to conduct from a copy with the cues as to entrances only inserted, in addition to the voice parts and condensed orchestral parts, such as they can *really read*, rather than fail to inspire confidence by attempting to follow the intricacies of a modern score in its notational aspect only.

118. Again, a conductor should really know and feel every bar of the composition he is "leading." In the case of orchestral compositions, it is not uncommon to know of conductors who have never heard the music given, apart from their own orchestras! Young conductors will also find it hugely satisfactory not only to make themselves acquainted with various renderings by the best conductors, but to play the music over themselves, if merely in the form of pianoforte solo or duet, previously to rehearsing it with their band.

119. Berlioz lays down the axiom that "an orchestra which does not watch the conducting-stick has no conductor." This is obviously true; yet the fact that an orchestra habitually does not look at the conductor is more the fault of the conductor than of the orchestra. There are, however, times and seasons where a direct gaze at the

conductor is neither necessary nor desirable. When an orchestra is once launched into a sea of complexities in which there is no change of metronomic rate, the general movement of the bâton seen by the traditional "quarter of an eye" is quite sufficient; and to insist on the eye being deliberately removed from the copy at such times directly courts disaster, and is neither expected nor desired by any experienced conductor. When, however, changes of *tempo* are imminent, pauses occur, phrases are taken up after rests, or *tempo rubato* is required—then, indeed, is the closest attention to be enjoined, and the power of discipline and control possessed by the conductor is fully tested.

120. It may further be stated that the orchestra or choir whose conductor's eyes are consistently and persistently fixed on the music in front of him has no real conductor, though he may be an admirable time-beater. The influence of the eye is one of the most potent in establishing and maintaining discipline and control, as well as in arousing enthusiasm—*esprit de corps*—by the "magnetic personality" of which we so often read and hear; and, without going so far as to suggest that conductors should always work from memory in public, yet there is no doubt that many points are lost and others obscured through their un-

willingness or inability to do so. Much of the bad discipline prevalent in churches where the organist-choirmaster plays the instrument whilst instructing his choir would be avoided by either having an assistant to accompany while he conducts and controls, or by the use of a small piano on wheels which can be moved as desirable, at which he himself presides; practically knowing by heart all the music he is called upon to teach, that his eyes may be free.

121. Effective discipline and control form, indeed, large elements in the success of any choir-trainer or conductor. "Show me a good disciplinarian, and I will show you a good teacher," used to be an adage; and there is much to be said for its truth. It is quite certain, of two teachers, one being a disciplinarian but an inferior scholar, and the other full of learning but weak in discipline, that in an ordinary class the former will get the best results as a whole.

Locke says ("Thoughts on Education," Sec. 54), "Remove hope and fear, and there is an end of all discipline." On "hope" and "fear" is built up the whole, or at any rate the greater part, of the entire system of social observances. It, of course, does not take the crude forms directly implied by the words "hope" and "fear" in their strictest tense; but in their derivatives—desire of

gaining esteem, popularity, and friendship, the being thought well of, knowledge as to "good form" and *savoir-faire*—as against censure, loss of prestige, unpopularity or social boycott—it may be seen that these two elements are still at work. Any conductor or teacher, by the exercise of a little tact in using these weapons, can always ensure quiet attention to the work in hand; though in the case of choir-boys who have got "*out* of hand" somewhat more heroic measures may be necessary!

Reform of an existing body by the existing set of officers in regard to discipline is almost impossiable, and its attempt generally leads to "friction."

"Begin as you mean to continue" is a good motto, if you begin *well*; but nothing is more subversive of discipline than the making of a number of rules which you have neither the power nor the intention to enforce. It is like the eternal "You mustn't" or "You shan't" of the thoughtless parent, and has a similar effect. If one begins by nipping in the bud the slightest approach to bad discipline as it arises, in time the higher moral force engendered prevents its return. Some singers or players take advantage of any momentary stoppage of the music to converse with their neighbour, even if the conductor is speaking: this tendency to talking at wrong

times generally is a most insidious and demoralising destroyer of discipline, which, unchecked, may lead to worse and worse things. There are, however, more ways than one of doing this: the best, preserving quiet dignity on the one hand, will on the other convey a rebuke without giving offence.

While too great reserve is destructive of enthusiasm, too great familiarity certainly breeds contempt. Friendliness without intimacy (often presumed on), dignity without pride, good-humour without feeble attempts at "funniness"—represent the happy medium at which choir-trainers and conductors may well aim in their relations with the bulk of their forces.

122. One very essential quality for a good conductor is a power of estimating and feeling, as it were, in his mind, the correct *tempo* of music before it begins. Some conductors seem to be literally at the mercy of their band and chorus in this respect, until a start has been actually made, when the "conductor" adjusts things, or gets adjusted!

123. Other things being equal, there is no doubt that the conductor who is more or less of a singer has a great advantage. For excellence as a choral conductor it seems more or less a *sine quâ non*.

That some of our orchestral conductors are not equally successful chorally is doubtless owing to their want of voice and their consequent failure to

realise all those points which especially deal with choral singing ; in addition to which, their inability to give practical illustrations when needed is a great drawback.

124. It is in the band-room or practice-room that the real work of the conductor is done. However much he may "pose" when before the public in the concert-room, it is there that he builds up his reputation, and it is there that his shortcomings as to aural training, reading score, and knowledge of detail will be discovered. Very few musicians have sufficient acuteness of ear to perceive and recognise all the minute departures from accuracy which take place when a large number of executants are engaged on a new piece, yet they often attach exaggerated importance to the various slips they may discover. The procedure here should be similar to that spoken of in Sec. 106, the conductor at first being content with broad outline, and polishing the details by sectional rehearsals.

Sectional rehearsals are great economisers of time, and are sometimes essential factors in success. If parts are not tried over separately, many faults escape individual detection and correction ; yet, if this is done at a general practice, it often leads to an irksome and irritating waste of time on the part of the others resting, or encourages that

tendency to conversation already spoken of as so destructive of discipline. Sectional rehearsals, in preparation for the full rehearsals, save all this.

Four sectional rehearsals of strings, with two of wood wind and brass, will often accomplish much more than a dozen combined rehearsals; and if there is a choir as well as an orchestra to be considered there is more need for them than ever. If only one evening a week can be devoted to practice, a good arrangement would be—

7 P.M. Choir alone.
8 P.M. Choir and orchestra.
9 P.M. Orchestra alone.

In the same way, sectional rehearsals of the boys and men in a church choir, or of female and male voices in a choral society, are often of the greatest advantage in studying new and complex works.

125. The permanence of a choral society will, even if other circumstances are favourable, still largely depend on two elements: the existence of a "feeding-ground" to supply the places of those who from various causes fall out from the ranks, and the necessity for the performers being somewhat on a level in regard to musical acquirements, financial and social position. One of the best, soundest, and most successful ways of ensuring these points is for the performing classes to be the outcome of the training classes. Many conductors

begin at the wrong end, and in their endeavour to build a house from the top instead of the bottom foredoom themselves not only to failure, but that which is worse—disgust, discouragement, and disillusionment.

126. Formerly it was thought that if an orchestra gave its notes correctly, with respectable *nuance* and phrasing, in correct *tempo*, and good intonation, it had done all that could be reasonably expected. In the same way, if a chorus sang the right notes at the right time, in good tune and tone, with firm attack, and observation of the broader effects of "light and shade," it was held to have fulfilled its destiny. Nowadays, however, we expect much more than this: we demand a degree of emotionalism from both band and chorus in no sense inferior in degree to that to which we are accustomed from solo artists. No longer mere metronomic machines, we expect a band and chorus in a modern composition to give us metrical accent in its due proportion only, detailed and sympathetic, rhythmic and expressive accent where required, and even the *rubato* when it is suggested by the passionate flow of the music. Added to this, the voices must show dramatic perception and general intelligence and clearness of enunciation, flexibility of utterance, and general finish.

127. Finally, it must be remembered that, as

a unit is part of a whole, so the same laws which apply to the development of the whole hold good also as to its several parts. If the individual members of a choral or orchestral society are themselves trained to feel, to know, and to express, and their conductor is himself in possession of sufficient perceptive power, adequate intellectual capacity, and satisfactory technique, the highest results must and will declare themselves.

AFTER NOTE.

"Studies serve for delight, for ornament and ability . . . . There is no stond or impediment in the wit, but may be wrought out by fit studies."—LORD BACON.

INDEX.

An easy way of rapidly assimilating the principal contents of this book is by reference from such subjects in the Index as are of interest to the reader to the body of the work.

All the numbers refer to the sections.

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